WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE

and

OREGON STATE UNIVERSITY

and

STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

AS OF

JUNE 1, 1964

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 2807, Portland, Oregon 97208.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
Western United States	Monthly (Feb.-May)	Portland, Oregon	All Cooperators
Basic Data Summary	October 1	Portland, Oregon	All Cooperators
STATES			
Alaska	Monthly (Mar.-May)	Palmer, Alaska	Alaska S.C.D.
Arizona	Semi-Monthly (Jan.15 - Apr.1)	Phoenix, Arizona	Salt R. Valley Water Users Assoc. Ariz. Agr. Exp. Station
Colorado and New Mexico	Monthly (Feb.-May)	Fort Collins, Colorado	Colo. State University Colo. State Engineer N. Mex. State Engineer
Idaho	Monthly (Jan.-June)	Boise, Idaho	Idaho State Reclamation Engineer
Montana	Monthly (Jan.-June)	Bozeman, Montana	Mont. Agr. Exp. Station
Nevada	Monthly (Jan.-May)	Reno, Nevada	Nevada Dept. of Conservation and Natural Resources - Division of Water Resources
Oregon	Monthly (Jan.-June)	Portland, Oregon	Oreg. State University Oregon State Engineer
Utah	Monthly (Jan.-June)	Salt Lake City, Utah	Utah State Engineer
Washington	Monthly (Feb.-June)	Spokane, Washington	Wn. State Dept. of Conservation
Wyoming	Monthly (Feb.-June)	Casper, Wyoming	Wyoming State Engineer

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
British Columbia	Monthly (Feb.-June)	Water Resources Service, Dept. of Lands, Forest and Water Resources, Parliament Bldg., Victoria, B.C., Canada
California	Monthly (Feb.-May)	Calif. Dept. of Water Resources, P.O. Box 388, Sacramento, Calif.

USDA SCS PORTLAND OREG 1963

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

ISSUED

JUNE 8, 1964

Report prepared by

W. T. FROST, Snow Survey Supervisor

and

BOB L. WHALEY, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE
209 S.W. 5TH AVE., PORTLAND 4, OREGON

Issued by

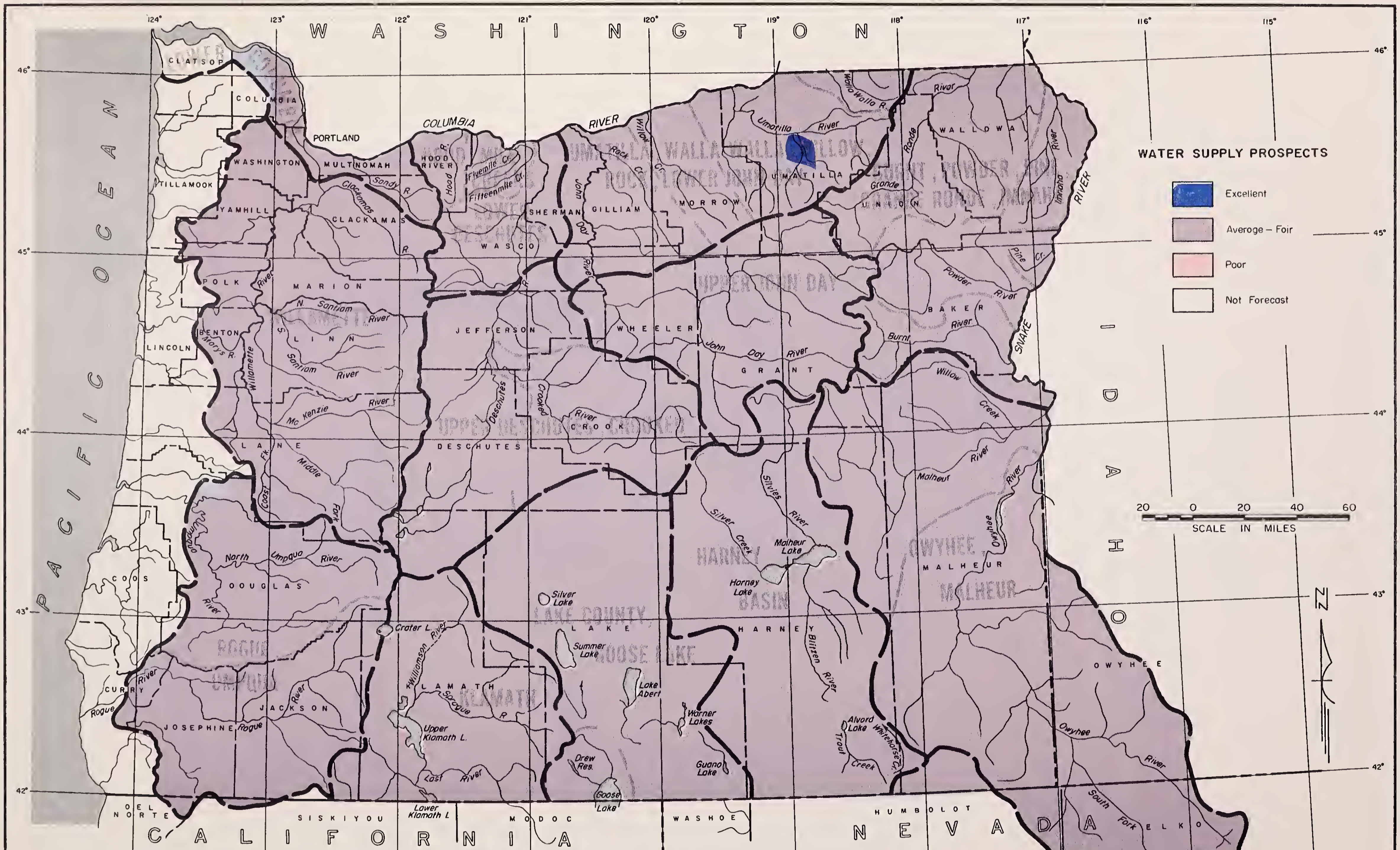
THOMAS P. HELSETH
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE

F. EARL PRICE
DIRECTOR
OREGON AGRICULTURAL
EXPERIMENT STATION

CHRIS L. WHEELER
STATE ENGINEER
STATE OF OREGON

TABLE OF CONTENTS

Note: Previously Unpublished & Errata Snow Data.....Appendix



WATER SUPPLY PROSPECTS for OREGON
Spring and Summer Period

JUNE 1, 1964

WATER SUPPLY OUTLOOK for OREGON

JUNE 1, 1964

Oregon's 1964 water supply outlook is "near average" for most lands served by reservoir stored water. One exception to this is McKay Reservoir, which has not received adequate inflow to provide a full season's water supply and late season shortages are expected.

Low precipitation over most of the state during May has caused streams to recede sooner than earlier predictions indicated and some late season shortages may occur for irrigators diverting from natural streamflow -- especially on smaller streams, heading in lower elevation watersheds.

SNOW COVER

Cool temperatures have retarded usual snowmelt rates and a good snowpack still remains at the higher elevations of the state, such as the ridge of the Cascades, the Wallowas, and the Elkhorns. Only a scattered few measurements are taken as late as June 1 and these have not been measured frequently enough to make a good comparison, but do indicate a good snowpack for this late in the season.

RESERVOIR STORAGE

Twenty four of Oregon's reservoirs now total 93 percent of the June 1 average for the 1943-57 period. Storage in these reservoirs will provide an adequate water supply in all cases except for McKay Reservoir near Pendleton, which will have late season shortages.

Malheur River reservoirs, Warmsprings and Agency Valley, may have slightly reduced water allotments as a result of less than average inflow this spring.

STREAMFLOW

Streamflow was well below average due to low precipitation and cool temperatures over most of the state during May.

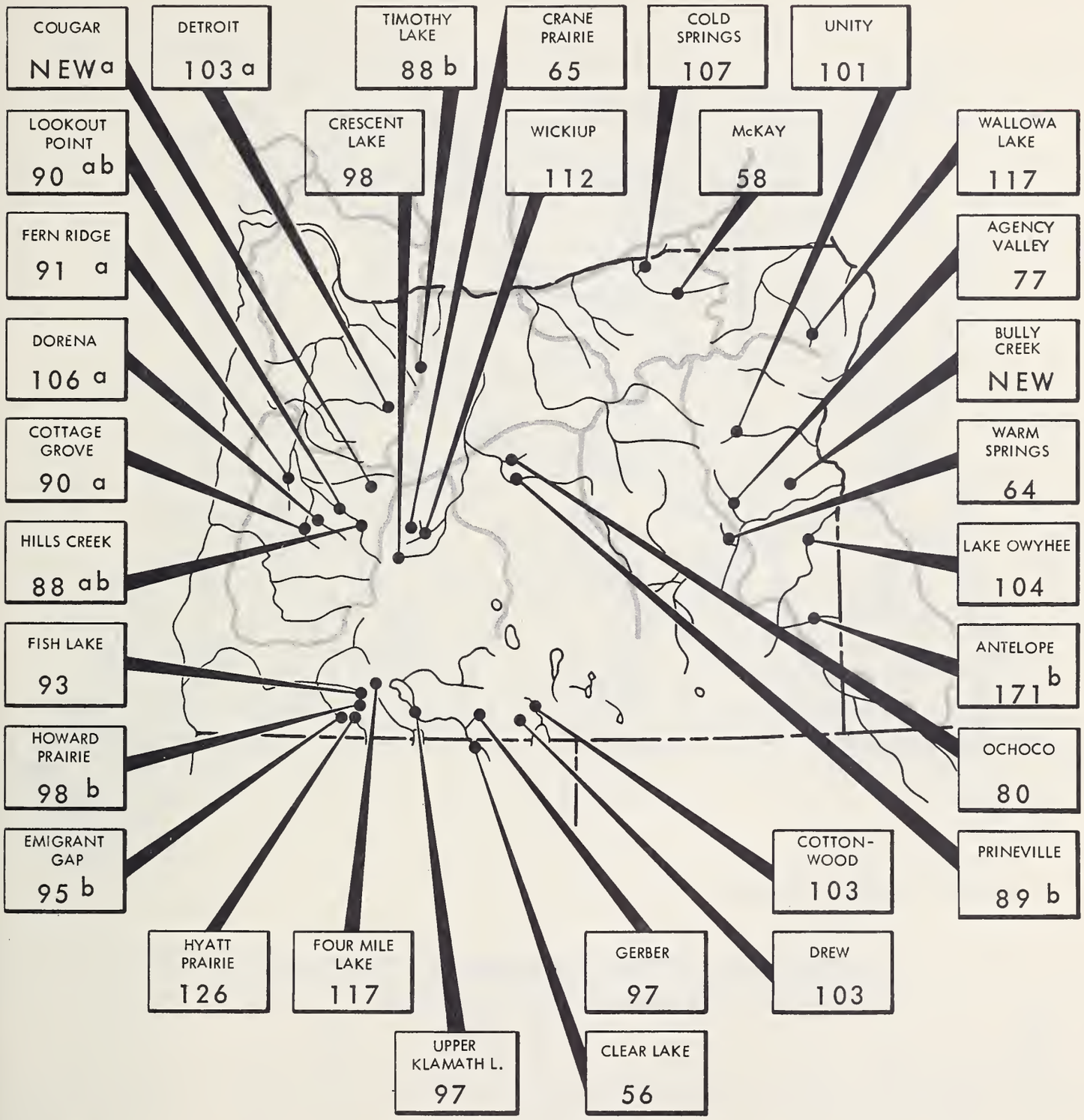
Forecasts now range from 40 percent of average for the Crooked River to 92 percent for the White River for the May-September period.

The Columbia is now expected to flow about 104 percent of average for the May-September period at The Dalles.

U.S. DEPARTMENT of AGRICULTURE
CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY
SOIL CONSERVATION SERVICE

STORAGE STATUS of OREGON RESERVOIRS
as percent of 1943-57, 15 year average

JUNE 1, 1964



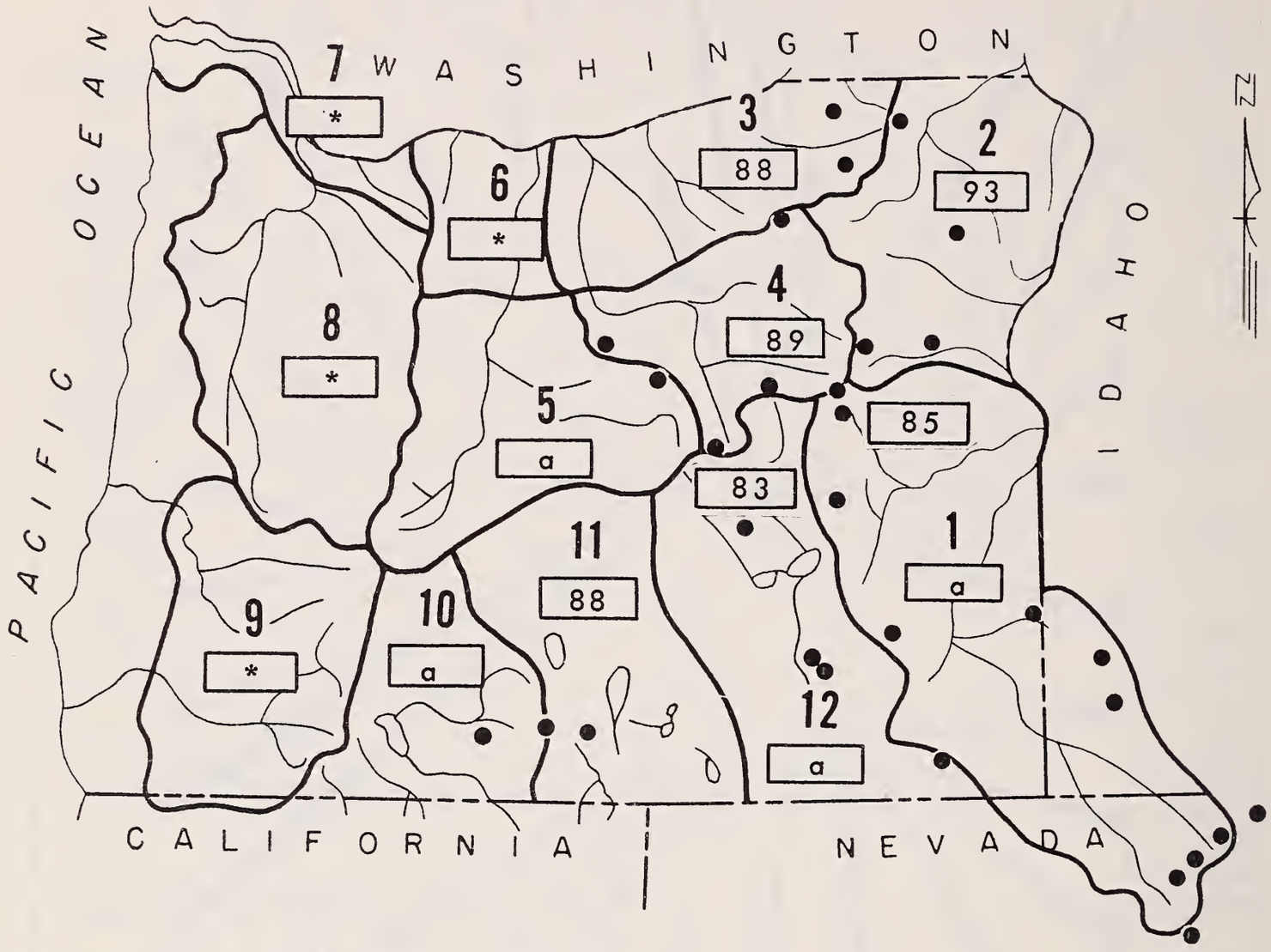
(a) Multiple purpose reservoir - space reserved primarily for flood runoff.

(b) Short record - compared with last year on this date.

N.R. - No report.

MOUNTAIN SOIL MOISTURE in OREGON
as percent of capacity

JUNE 1, 1964



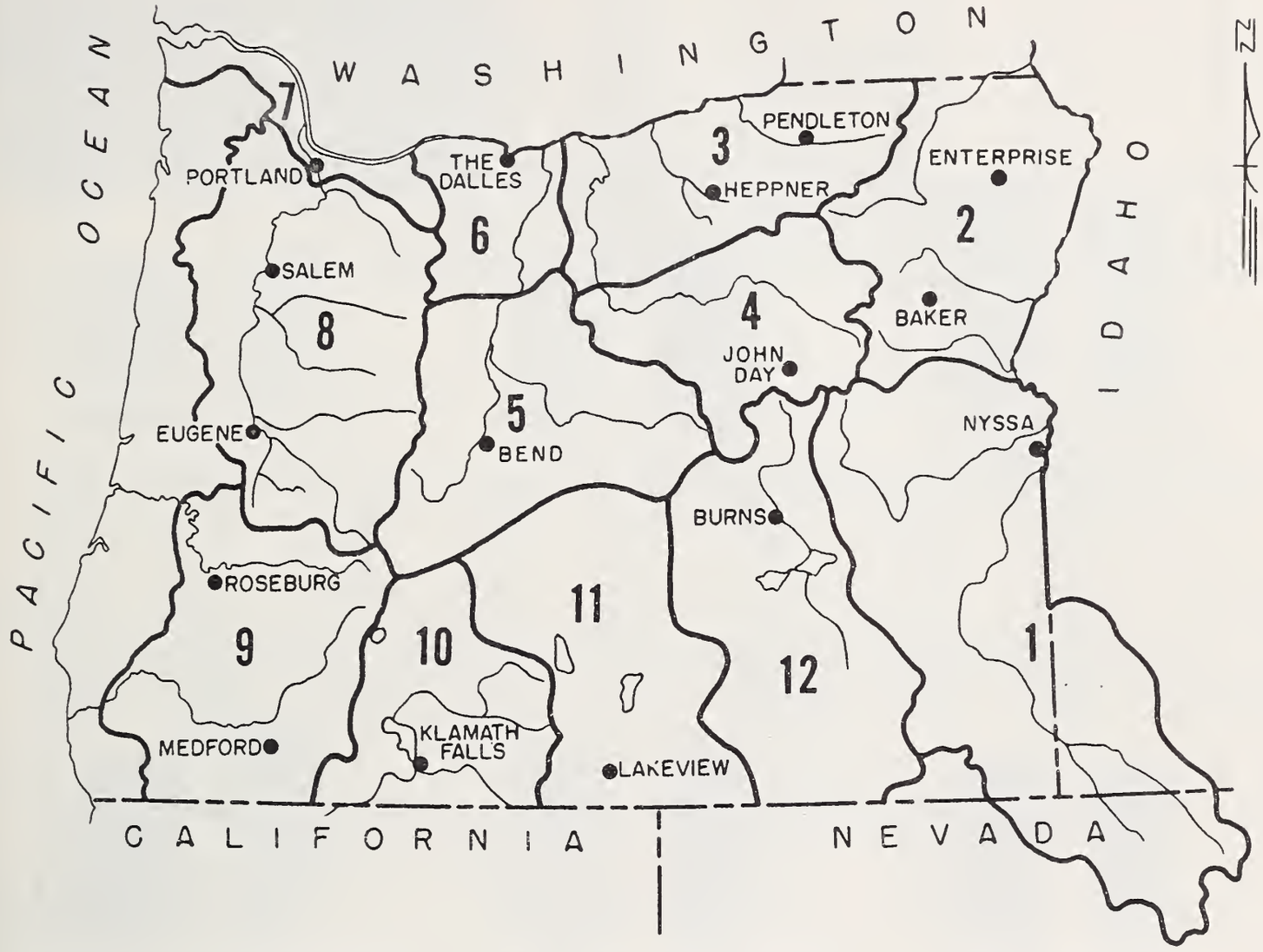
● Soil Moisture Station

* *Moisture studies not yet developed in these areas.*

a *No current measurements for comparison.*

VALLEY PRECIPITATION in OREGON [a]

JUNE 1, 1964

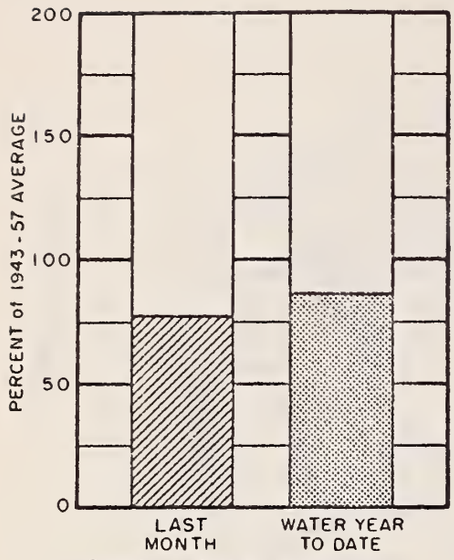


PRECIPITATION as PERCENT of the 1943-57 AVERAGE					
STATION	LAST MONTH	WATER YEAR TO DATE [b]	STATION	LAST MONTH	WATER YEAR TO DATE [b]
BAKER KBKR	43	82	LAKEVIEW	76	94
BEND	1	57	MEDFORD APT.	55	95
BURNS	72	84	NYSSA	119	110
ENTERPRISE	56	74	PENDLETON APT.	2	56
EUGENE APT	49	94	PORTLAND APT.	54	80
HEPPNER	1	65	ROSEBURG APT.	55	88
JOHN DAY	10	70	SALEM APT.	31	81
KLAMATH FALLS APT.	60	75	THE DALLES	3	64

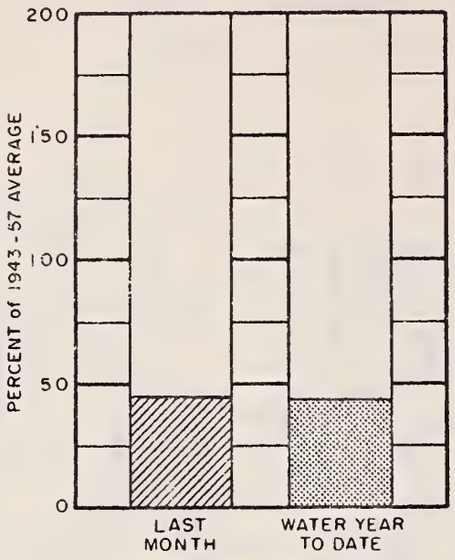
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

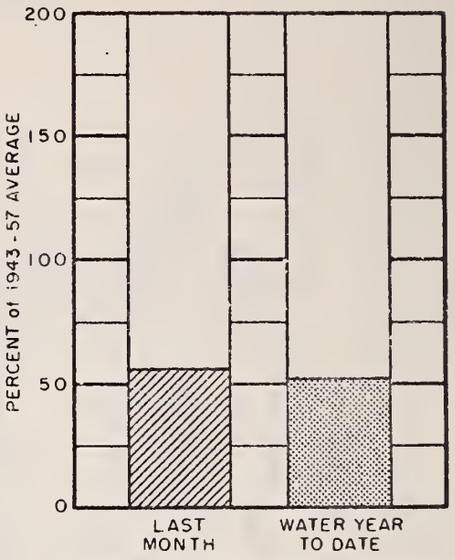
JUNE 1, 1964



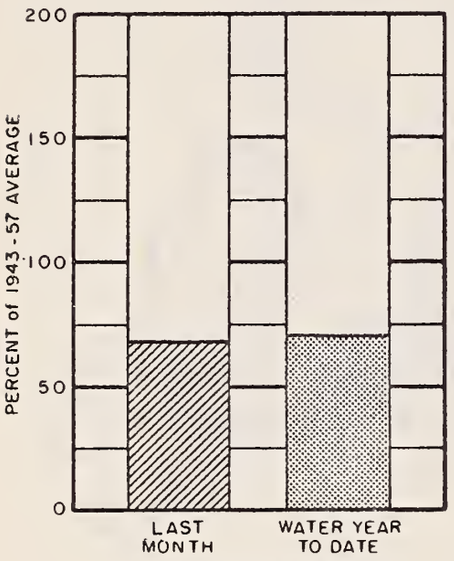
Owyhee Lake net inflow



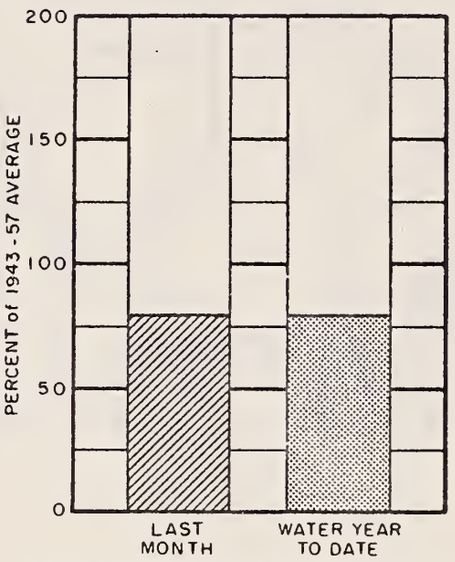
Umatilla near Umatilla



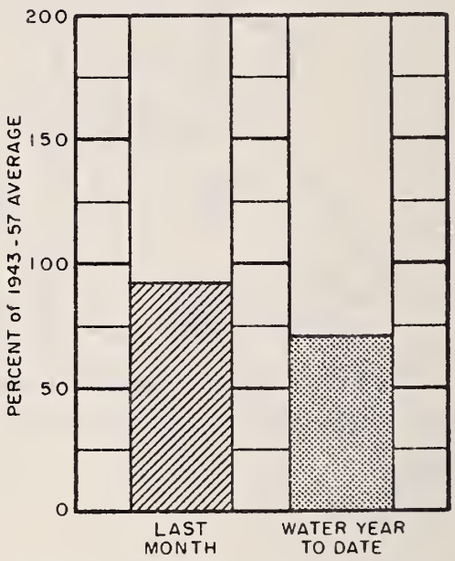
John Day at Service Creek



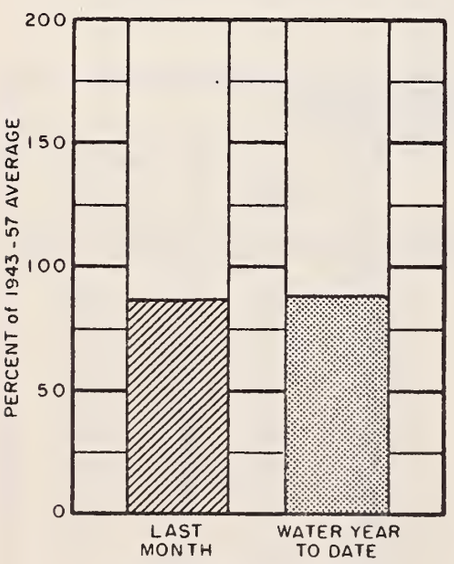
Deschutes at Moody



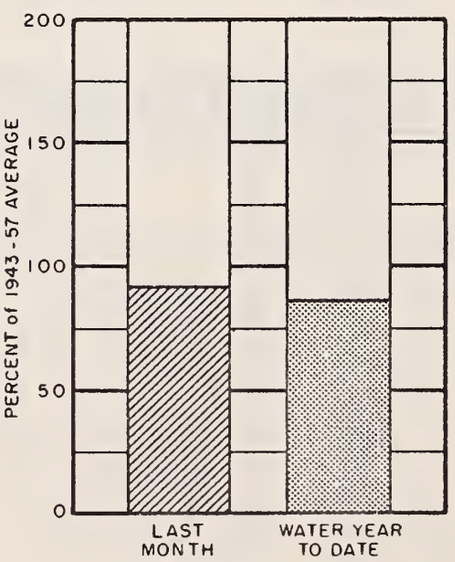
Hood and conduit near Hood River



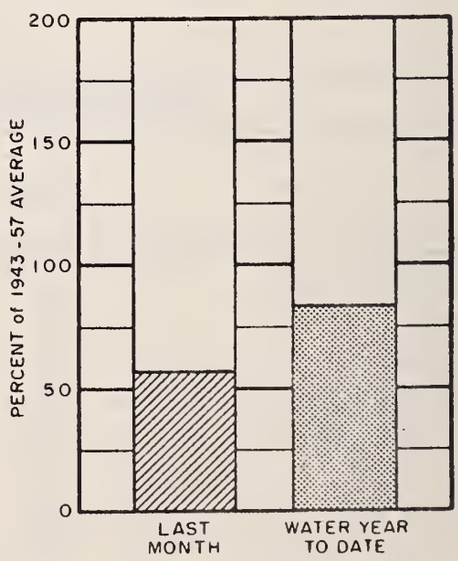
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.; and North and South Boards of Control Owyhee Project.

WATER SUPPLY OUTLOOK
OWYHEE, MALHEUR WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season is well underway in Malheur County with an adequate water supply outlook for most irrigators using reservoir stored water.

The Vale, Oregon and Warmsprings Irrigation Districts are expected to have a little less than their usual 3 acre foot allotments, but Owyhee and Jordan Valley Districts are looking towards a good irrigation season and some carryover water this fall.

SNOW COVER

Snow has disappeared from all areas of the county, except the highest and most protected spots, and no snow measurements are taken in this part of the state on June 1.

SOIL MOISTURE

Soil moisture measurements were taken on the Malheur at two stations just prior to June 1. These stations show 88 percent of capacity and have maintained the same moisture content as on May 1.

RESERVOIR STORAGE

Lake Owyhee held 628,700 acre feet on June 1 or 104 percent of average. Last year at this time it held only 349,300 acre feet. This will be a good supply for Owyhee water users, with some carryover.

Antelope Reservoir has had very good inflow and is now full at 55,000 acre feet. This is an ample supply for Jordan Valley Irrigation District and will possibly give them some carryover to start next season.

Malheur River water users have not been as fortunate on spring runoff as was earlier predicted. Storage in Warmsprings and Agency Valley now totals 128,000 acre feet compared with 174,900 acre feet last year on June 1 and an average of 189,500 a.f.

Bully Creek Reservoir now has 19,000 acre feet in storage and last year, in the final stages of construction, it held 6,900 acre feet on June 1.

STREAMFLOW

The lack of precipitation until the last few days of May was a major factor in producing below average streamflow in the county during the month.

continued on next page

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE . PORTLAND 4, OREGON

Streamflow forecasts have again been dropped to adjust for below average flows during May and now range from 56 percent of average or 20,000 acre feet on the Malheur near Drewsey to 79 percent or 170,000 a.f. for the inflow to Lake Owyhee for the May-September period.

The North Fork of the Malheur is expected to flow 25,000 acre feet or 66 percent of average.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Average	Average
Bully Creek	Average	Average
Cow Creek	Average	Average
Jordan Creek	Average	Average
Jordan Valley Irrig. Dist.	Average	Average
McDermitt Creek	Average	Average
Oregon Canyon Creek	Average	Average
Owyhee Project	Average	Average
Succor Creek	Average	Fair
Tenmile Creek	Average	Fair
Vale, Oregon Irrig. Dist.	Average	Fair
Warmsprings Irrig. Dist.	Average	Fair
Willow Creek (Reservoired)	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Agency Valley	60.0	40.8	57.5	53.3
Antelope	55.0	55.0	32.1	- -
Bully Creek	31.0	19.0	6.9	- -
Owyhee	715.0	628.7	349.3	604.8
Warmsprings	191.0	87.2	117.4	136.2

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

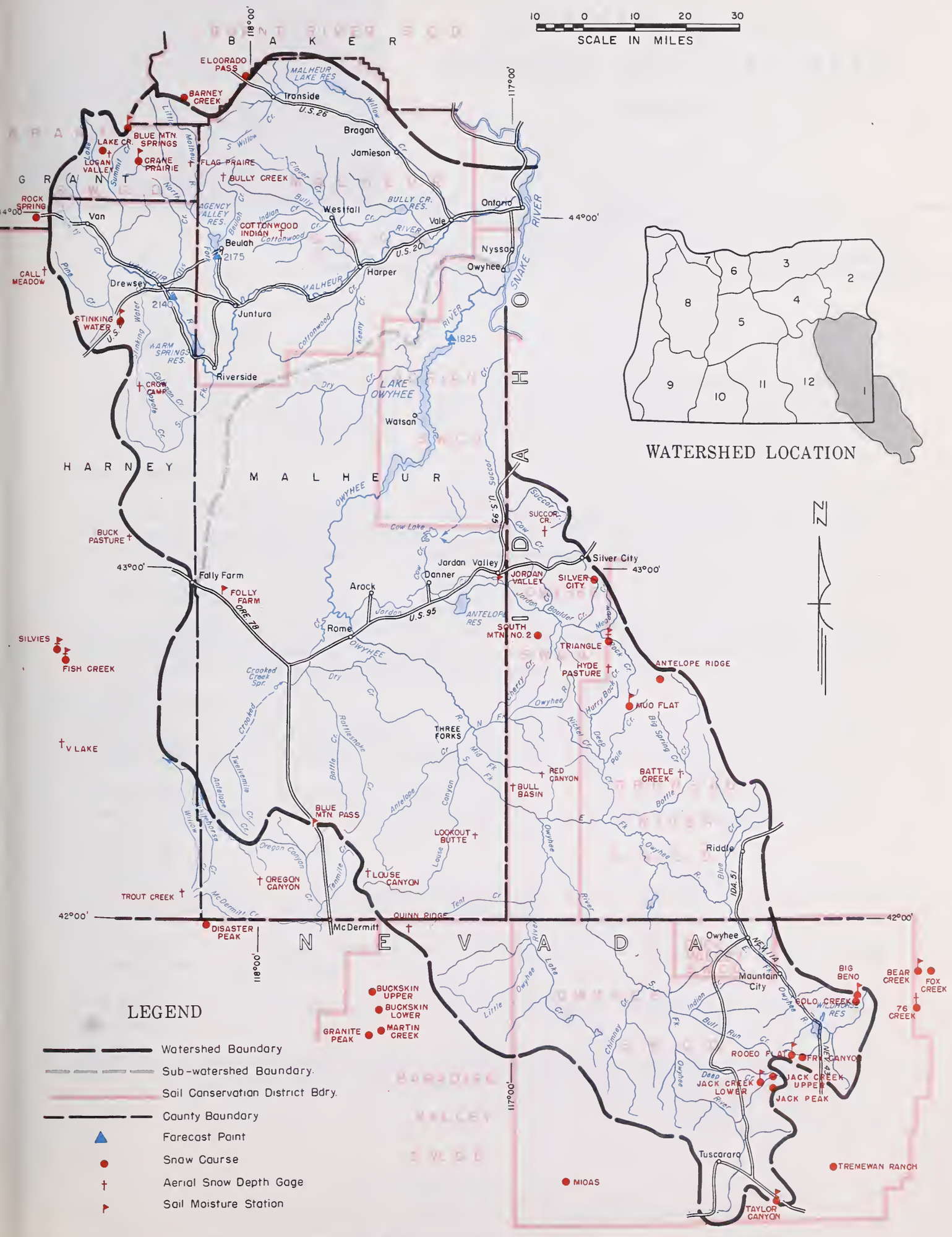
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
2140	Malheur near Drewsey	20	May-Sept.	36	56
		19.5	May-July	35	56
2175	Malheur, North Fork at Beulah[d]	25	May-Sept.	38	66
1825	Owyhee Reservoir net Inflow[k]	170	May-Sept.	214	79
		155	May-July	196	79

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Big Bend (Nev.)	6700	48	16.7	4-29-64	16.5[f]	16.2[f]	16.6[f]
Blue Mountain Springs	5900	42	16.9	5-27-64	12.5	14.4	13.8
Crane Prairie	5375	48	18.2	5-27-64	17.4	17.6	17.7
Folly Farm	4450	30	12.5	3-8-64	8.3[f]	9.8[f]	11.6[f]
Jack Creek, Lower (Nev.)	6800	48	8.7	5-1-64	8.4[f]	8.6[f]	8.5[f]
Jordan Valley	4250	48	19.3	3-8-64	14.5[f]	16.8[f]	17.5
Mud Flat (Ida.)	5500	48	12.8	3-25-64	9.5[f]	11.6	10.0
Rodeo Flat (Nev.)	6800	42	11.0	4-29-64	10.8[f]	10.9	11.0
Stinking Water Summit	4800	48	21.9	3-25-64	20.8[f]	21.9[f]	21.9
Taylor Canyon (Nev.)	6200	48	15.1	5-1-64	14.9[f]	14.3[f]	14.9[f]
Triangle (Ida.)	5150	48	16.2	3-25-64	13.5[f]	16.2	15.1

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (l) Ground measurement. (m) Average for 5 or more years in base period.

OWYHEE, MALHEUR WATERSHEDS



OR-1c

WATER SUPPLY OUTLOOK
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season is underway in Baker, Union and Wallowa counties with a "near average" water supply outlook. Streamflow forecasts have been reduced slightly due to less than average precipitation and runoff during May, but reservoir storage is above average.

SNOW COVER

Snow cover is still in evidence at the higher elevations, although only Tollgate snow course was measured on June 1. Tollgate snow course had an average of 4 inches of depth containing 2.2 inches of water equivalent.

SOIL MOISTURE

Soils at higher elevations have continued to gain moisture from the melting snow and are now 93 percent of capacity. Lower elevation soils are drying rapidly due to less than half the average May rainfall over most of the area.

RESERVOIR STORAGE

Wallowa Lake now holds 29,600 acre feet compared with 38,700 last year. The average for June 1 storage in Wallowa Lake is 25,200 acre feet.

Unity Reservoir has 22,800 acre feet in storage or 101 percent of the 15 year average for June 1. Last year it held 24,200 acre feet at this time.

STREAMFLOW

Streamflow forecasts were dropped 7-13 percent due to low precipitation causing less than previously expected May streamflow.

Burnt River is now expected to flow 15,500 acre feet or 82 percent of average for the May-September period.

The Powder River forecast is 80 percent of average or 35,000 acre feet for the same period.

Catherine Creek is forecast to flow 45,000 acre feet or 79 percent and the Grande Ronde, 90,000 acre feet or 76 percent of the same May-September period.

continued on next page

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

The Wallowa East Fork forecast is now 9,600 acre feet or 85 percent of the May-September period and the Lostine and Hurricane are also forecast at 85 percent of the 1943-57 average for the April-September period.

Bear Creek is expected to flow 60,000 acre feet or 81 percent of the April-September average and the Imnaha is forecast to flow 250,000 acre feet or 80 percent for the same period.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope	Average	Average
Baker Valley	Average	Average
Big Creek	Average	Average
Clover Cr. (nr. No. Powder)	Average	Average
Cove	Average	Average
Durkee	Average	Fair
Eagle Valley	Average	Average
Elgin	Average	Average
Enterprise-Joseph	Average	Average
Hereford-Bridgeport	Average	Average
Imnaha River	Average	Average
LaGrande-Island City	Average	Average
Lostine-Wallowa	Average	Average
No. Powder River-Wolf Cr.	Average	Average
Pine Valley	Average	Average
Powder River-Elk Creek	Average	Average
Summerville	Average	Average
Sumpter Valley	Average	Average
Union-Hot Lake	Average	Average
Unity	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Unity	25.2	22.8	24.2	22.6
Wallowa Lake	37.5	29.6	38.7	25.2

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
3305	Bear near Wallowa	60	April-Sept.	74	81
2730	Burnt near Hereford	15.5	May-Sept.	19.0	82
3200	Catherine near Union	45	May-Sept.	57	79
3190	Grande Ronde at LaGrande	90	May-Sept.	119	76
3295	Hurricane near Joseph	42	April-Sept.	49	85
2920	Imnaha at Imnaha	250	April-Sept.	314	80
3300	Lostine near Lostine	113	April-Sept.	133	85
2755	Powder near Baker	35	May-Sept.	44	80
		34	May-July	43	80
3250	Wallowa, East Fork near Joseph[d]	9.6	May-Sept.	11.3	85

SOIL MOISTURE

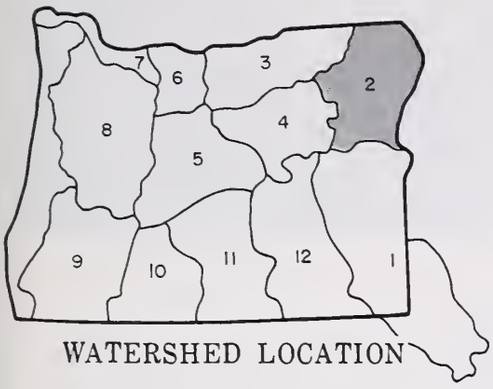
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Summit	5100	36	16.8	5-29-64	15.6	15.7 f	13.2 f
Emigrant Springs	3925	48	22.3	5-26-64	21.4	20.9 f	21.5 f
Tollgate	5070	48	23.6	5-26-64	20.2	21.2 f	21.4 f

SNOW

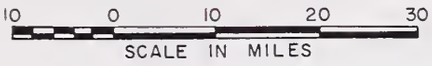
SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Tollgate	5070	5/26	4	2.2	- -	- -

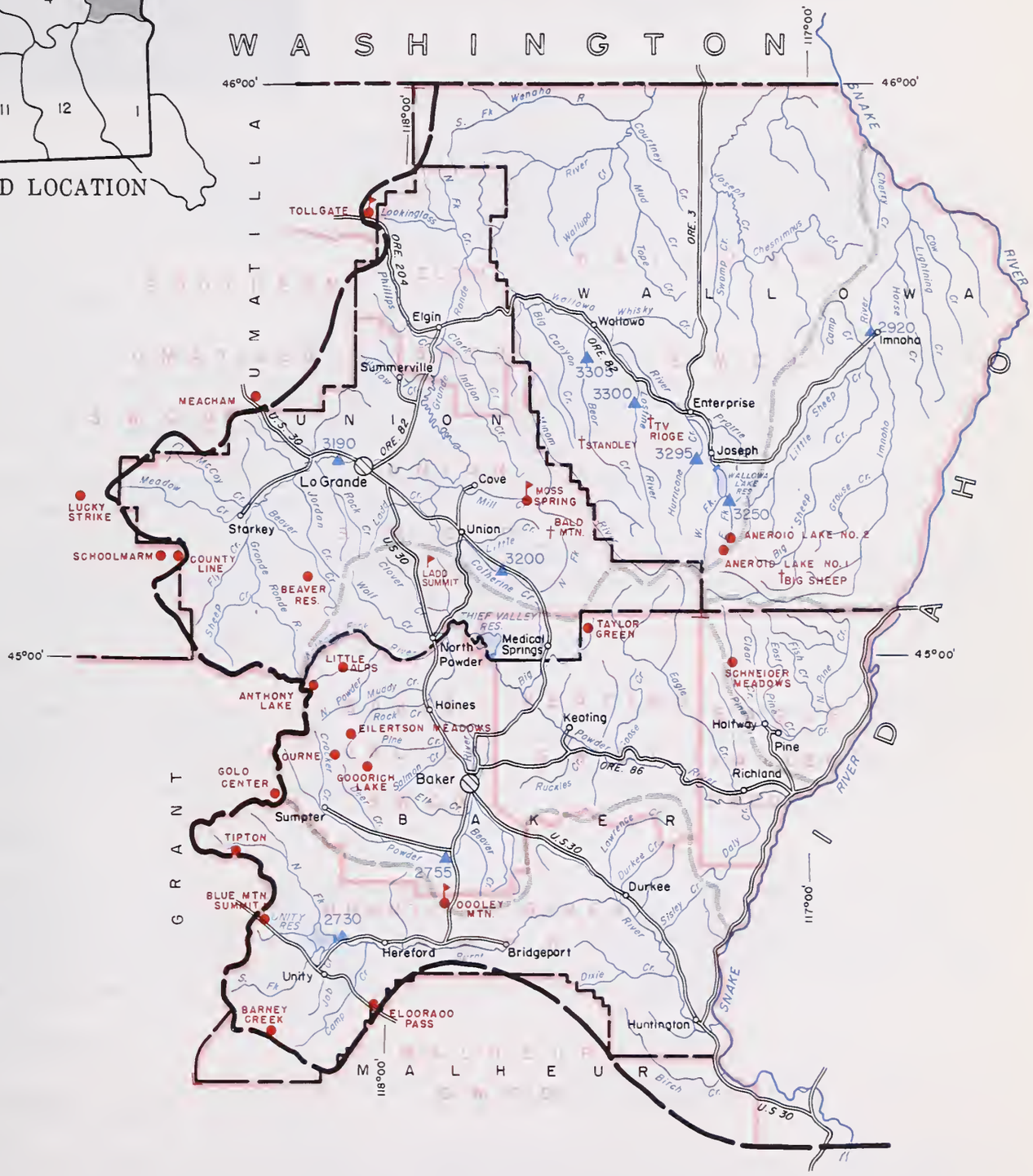
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



WATERSHED LOCATION





LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Boy.
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station
- Aerial Snow Depth Gage

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation water supply outlook in Umatilla, Morrow and Gilliam counties has become progressively worse, and is now only near average to fair. Low precipitation and drying winds have caused less runoff than was expected from a good snowpack and streamflow forecasts have again been reduced accordingly.

Streamflow is now expected to drop off sooner than earlier predictions indicated, especially on lower elevation streams.

McKay Reservoir inflow was not as good as expected during May, resulting in even greater prospects of late season shortages for water users depending on this source of supply.

SNOW COVER

A little snow still remains at the highest and most protected locations of the watersheds in this area. Tollgate snow course shows an average depth of 4 inches with 2.2 inches of water equivalent. This is good for this late in the season and reflects cooler than average temperatures reducing the snowmelt rate.

SOIL MOISTURE

Higher watershed soils are still 88 percent of capacity although beginning to dry out a little at all stations except Tollgate, which is still snow covered. Lower elevations soils are drying rapidly as a result of record low precipitation in this area for the past few months. Crops and range land on these lower elevations are suffering badly because of the lack of moisture in the soils.

RESERVOIR STORAGE

Cold Springs Reservoir is reported as holding 49,600 acre feet or about 3,000 a.f. more than last year at this time.

McKay Reservoir now holds 39,400 acre feet compared with 63,500 at this time last year and an average of 68,000 acre feet. This will not be enough for a full season for all water users under McKay unless much-needed rainfall occurs very soon to cut down water use and add to inflow to the reservoir.

continued on next page

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE · PORTLAND 4, OREGON

STREAMFLOW

Streamflow during May was not as good as predictions indicated from the good snowpack yet on the higher portions of the watershed on May 1. Forecasts of streamflow for the remainder of the May-September period have been reduced accordingly and now range from 9,000 acre feet or 67 percent on McKay Creek to 50,000 acre feet or 86 percent on the South Fork Walla Walla.

Butter Creek is expected to flow 3,500 acre feet or 71 percent of average for the May-September period, the Umatilla near Gibbon, 50,00 acre feet or 85 percent and at Pendleton, 84,000 acre feet or 85 percent for the same period.

The lack of precipitation in this area during the past few months is expected to cause an earlier decline in streamflow, especially on streams heading in the low to medium elevations.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek	Average	Fair
Butter Creek	Average	Fair
Dry Creek	Average	Fair
Dugger Creek	Average	Fair
Johnson Creek	Average	Fair
McKay Creek	Average	Fair
Mill Creek	Average	Fair
Mud Creek	Average	Fair
Pine Creek	Average	Fair
Rhea Creek	Average	Fair
Rock Creek	Average	Fair
Umatilla R. (Cold Spgs.Res.)	Average	Average
Umatilla River, Main	Average	Average
Umatilla River (McKay Res.)	Average	Fair-Poor
Walla Walla River, Little	Average	Average
Walla Walla River, Main	Average	Average
Walla Walla River, N. Fork	Average	Average
Walla Walla River, S. Fork	Average	Average
Willow Creek	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cold Springs	50.0	49.6	46.3	46.5
McKay	73.8	39.4	63.5	68.0

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

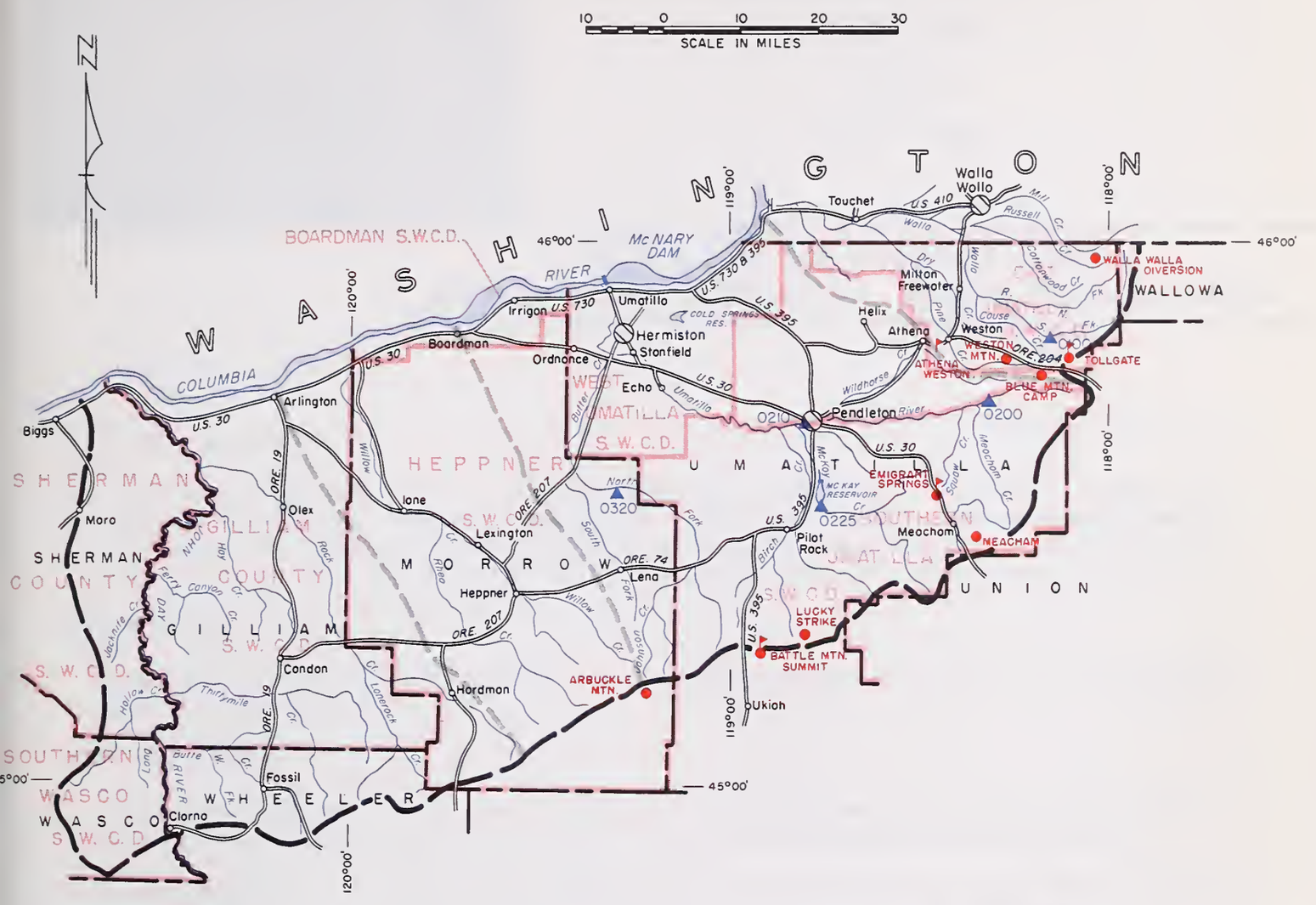
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
0320	Butter Creek near Pine City	3.5	May-Sept.	4.9	71
0225	McKay near Pilot Rock	9.0	May-July	13.5	67
0200	Umatilla near Gibbon	50	May-Sept.	59	85
0210	Umatilla at Pendleton	84	May-Sept.	99	85
		80	May-July	94	85
0100	Walla Walla, South Fork near Milton	50	May-Sept.	58	86
		37	May-July	44	84

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Athena-Weston	1700	48	18.7	5-26-64	14.0	16.0 [f]	15.7 [f]
Battle Mountain Summit	4340	48	13.8	5-27-64	13.1	13.7 [f]	13.2 [f]
Emigrant Springs	3925	48	22.3	5-26-64	21.4	20.9 [f]	21.5 [f]
Tollgate	5070	48	23.6	5-26-64	20.2	21.2 [f]	21.4 [f]

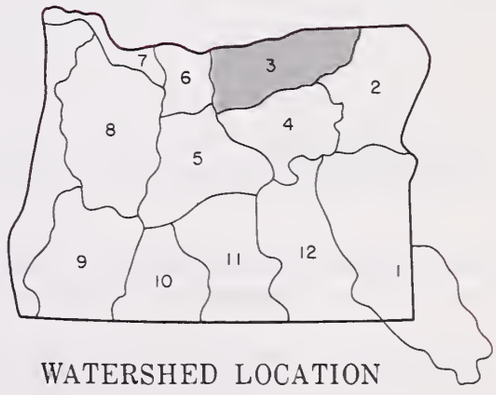
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS



LEGEND

- Watershed Boundary
- Sub-watershed Boundory
- Soil Conservotion District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station



WATERSHED LOCATION

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Arbuckle Mountain	5400	5/22	0	0.0	- -	- -
Blue Mountain Camp	4300	5/26	0	0.0	- -	- -
Tollgate	5070	5/26	4	2.2	- -	- -
Weston Mountain	2700	5/26	0	0.0	- -	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
UPPER JOHN DAY WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation water supply outlook in the Upper John Day basin is now near average in the early season to only fair in the late season. Below average precipitation has retarded streamflow and watershed soils are drying rapidly at lower elevations causing a great reduction in dry land crop and range forage growth.

SNOW COVER

Snow cover remains only at the higher and more shaded locations of the watersheds above 7,000 feet.

SOIL MOISTURE

Watershed soils at higher elevations are still 89 percent of capacity and have begun to dry out only in the last week or two after the remaining snow melted.

Lower watershed soils are showing the lack of precipitation and dry land crops and range forage is very short in some areas.

STREAMFLOW

Preliminary data from the U. S. Geological Survey in Portland indicates the flow of the John Day River at Service Creek was only 55 percent last month and has averaged only 51 percent for the October-May period.

Streamflow forecasts for the April-September irrigation season have been reduced as a result of low precipitation and flow during the first two months of the period.

Strawberry Creek is forecast to flow 8,200 acre feet or 90 percent of average. The John Day at Prairie City is expected to flow 46,000 acre feet or 85 percent and the Middle Fork at Ritter, 115,000 acre feet or 85 percent.

Smaller streams heading at lower elevations are expected to recede earlier than previous forecasts indicated unless intermittent rains occur periodically during the season.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek	Average	Fair
Beech Creek-Fox-Long Cr.	Average	Fair
Bridge-Mountain Creeks	Average	Fair
Camas Creek	Average	Fair
Cherry Creek	Average	Fair
Indian-Pine Creeks	Average	Fair
John Day River, Main Fork	Average	Fair
John Day River, Mid. Fork	Average	Fair
John Day River, N. Fork	Average	Fair
John Day River, S. Fork	Average	Fair
Monument-Kimberly	Average	Fair
Strawberry Creek	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
0385	John Day at Prairie City	46	April-Sept.	54	85
		40	April-July	49	85
0440	John Day, Middle Fork at Ritter	115	April-Sept.	135	85
		107	April-July	131	85
0375	Strawberry near Prairie City	8.2	April-Sept.	9.1	90

SOIL MOISTURE

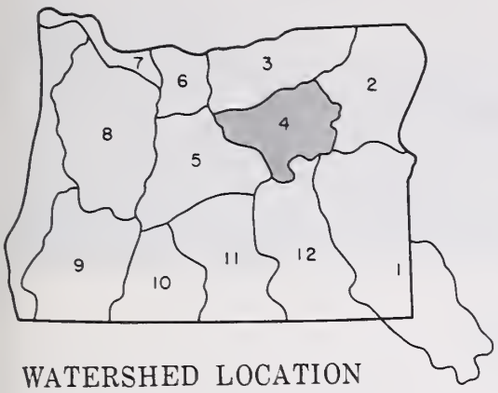
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Battle Mountain Summit	4340	48	13.8	5-27-64	13.1	13.7 f	13.2 f
Blue Mountain Springs	5900	42	16.9	5-27-64	12.5	14.4	13.8
Blue Mountain Summit	5100	36	16.8	5-29-64	15.6	15.7 f	13.2
Marks Creek	4540	36	14.1	4-28-64	13.4 f	13.5 f	13.7
Snow Mountain	6300	48	16.7	3-31-64	12.4 f	14.9 f	15.1 f
Starr Ridge	5150	36	10.6	5-26-64	10.4	10.4	10.5

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Arbuckle Mountain	5400	5/22	0	0.0	- -	- -

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

UPPER JOHN DAY WATERSHEDS



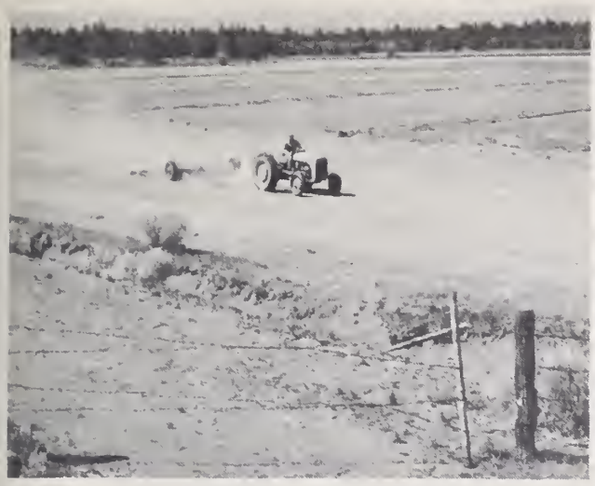
WATERSHED LOCATION

10 0 10 20 30
SCALE IN MILES

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Soil Maisture Station
- † Aerial Snow Depth Gage

"The Conservation of Water begins with the Snow Survey"



WATER SUPPLY OUTLOOK
UPPER DESCHUTES, CROOKED WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season is well underway in Crook, Deschutes, and Jefferson counties and the water supply outlook for the remainder of the season is adequate, mainly due to reservoir storage.

Cool temperatures and below average rainfall have resulted in less than expected streamflow during May and streamflow forecasts have been reduced accordingly.

SNOW COVER

Only one snow course was measured in this area on June 1. This course, Cascade Summit located at 4,880 feet elevation, showed 29 inches of snow depth with 14.6 inches of water equivalent. Last year it had no snow at this time. In 1960 it had 19.2 inches of water on June 1.

SOIL MOISTURE

Lower elevation soils have started to dry out rapidly due to below average rainfall during the last few weeks. Soils higher on the watershed near the melting snow are still absorbing moisture.

RESERVOIR STORAGE

Ochoco Reservoir now holds 31,300 acre feet. Less than expected May inflow into this reservoir may cause some late season shortages unless water can be used from Prineville Reservoir instead.

Prineville Reservoir now holds 135,500 acre feet. This reservoir had less than the expected May inflow, but still has very adequate storage.

Wickiup has 146,800 acre feet in storage or 112 percent of the 15 year average.

Crane Prairie now holds 30,900 acre feet or 65 percent of the average for June 1.

Crescent Lake has 49,200 acre feet in storage. Last month this reservoir was reported as holding 55,600 acre feet. It has since been reported that due to an error in the staff gage, the reading should have been 48,212 acre feet.

continued on next page

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

STREAMFLOW

Streamflow forecasts have been reduced due to low May precipitation and streamflow in the area. The forecasts now vary from 40 percent of average for the May-September period on Crooked River to 81 percent for the April-September period for Crescent Creek.

Inflow to Ochoco Reservoir is now only expected to be 8,000 acre feet or 50 percent of the May-September period unless above average rainfall occurs during the season.

Crane Prairie inflow is now expected to be 100,000 acre feet or 70 percent of the April-September average.

The Little Deschutes forecast has been dropped to 70,000 acre feet or 62 percent of average and Odell Creek to 25,000 acre feet or 74 percent of the April-September average.

Squaw and Tumalo creeks are expected to flow 45,000 and 42,000 acre feet respectively or 80 and 76 percent of their 15 year averages for the same April through September period.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Average	Average
Bear Creek	Average	Fair
Beaver Creek	Average	Fair
Camp Creek	Average	Fair
Central Ore. Irrig. Dist.	Average	Average
Crooked River	Average	Fair
Deschutes River	Average	Average
Hay-Trout Creeks	Average	Fair
Lone Pine Irrig. Dist.	Average	Average
Mill Creek	Average	Fair
North Unit Irrig. Dist.	Average	Average
Ochoco Creek	Average	Fair
Sisters Irrigation Dist.	Average	Average
Snow Creek Irrig. Dist.	Average	Average
Squaw Creek Irrig. Dist.	Average	Average
Swalley Ditch	Average	Average
Tumalo Project	Average	Average
Walker Basin Irrig. Dist.	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Crane Prairie	55.3	30.9	47.0	47.9
Crescent Lake	117.2	49.2	66.3	50.3
Ochoco	47.5	31.3	45.1	39.2
Prineville	153.0	135.5	152.5	- -
Wickiup	182.0	146.8	172.9	131.1

Note:

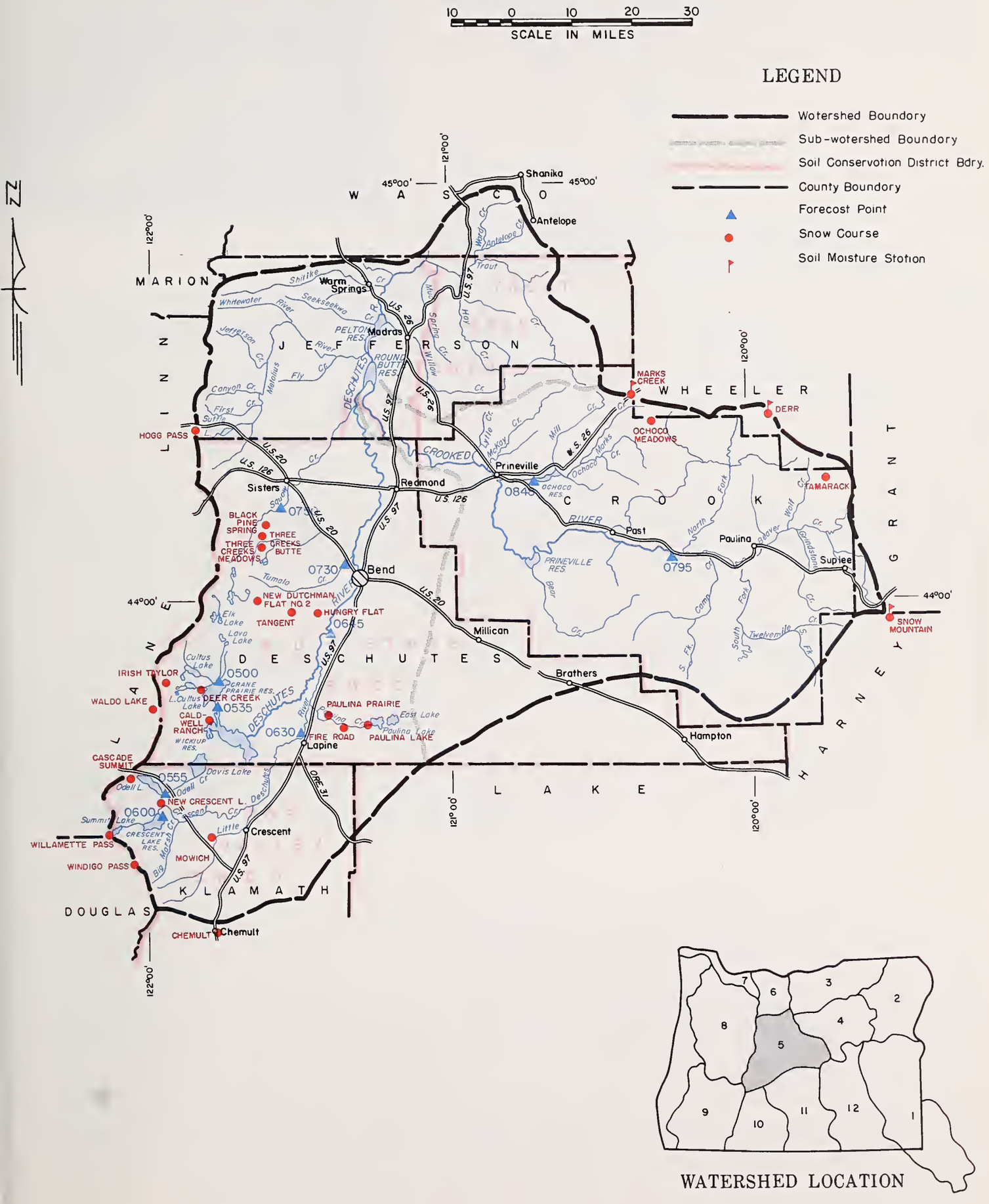
Current storage figure for Crescent Lake includes 5360 acre feet of known dead and inactive storage.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
0535	Crane Prairie Reservoir total Inflow	100	April-Sept.	143	70
0600	Crescent at Crescent Lake[d]	25	April-Sept.	31	81
		21	April-July	25	84
0795	Crooked near Post	20	May-Sept.	49	40
		19.2	May-July	47	40
0645	Deschutes at Benham Falls[d]	480	April-Sept.	602	80
		320	April-July	404	79
0500	Deschutes below Snow Creek	50	May-Sept.	67	75
0630	Deschutes, Little near Lapine[d]	70	April-Sept.	113	62
		62	April-July	100	62
0848	Ochoco Reservoir net Inflow	8.0	May-Sept.	16.0	50
0555	Odell near Crescent	25	April-Sept.	34	74
0750	Squaw near Sisters	45	April-Sept.	55	80
0730	Tumalo near Bend[d]	42	April-Sept.	55	76

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

UPPER DESCHUTES, CROOKED WATERSHEDS



WATERSHED LOCATION

SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	SOIL MOISTURE (Inches) THIS YEAR	SOIL MOISTURE (Inches) LAST YEAR	SOIL MOISTURE (Inches) 2 YEARS AGO
Marks Creek	4540	36	14.1	4-28-64	13.4 f	13.5 f	13.7
Snow Mountain	6300	48	16.7	3-31-64	12.4 f	14.9 f	15.1 f

SNOW

SNOW COURSE NAME	SNOW COURSE ELEVATION	CURRENT INFORMATION DATE OF SURVEY	CURRENT INFORMATION SNOW DEPTH (Inches)	CURRENT INFORMATION WATER CONTENT (Inches)	PAST RECORD WATER CONTENT (Inches) LAST YEAR	PAST RECORD WATER CONTENT (Inches) 1943-57 AVERAGE
Cascade Summit	4880	5/28	29	14.6	0.0	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for Hood River and Wasco counties is still "near average", although below average precipitation has dimmed prospects on smaller low elevation streams. Clear Lake Reservoir is still low and may be short of water late in the season.

SNOW COVER

Snow cover is good at higher elevations on Mount Hood with measurements taken at Phlox Point indicating the greatest water content ever recorded on June 1 for 15 years of measurement.

SOIL MOISTURE

Higher watershed soils are still gaining moisture from melting snow, but soils lower on the watershed are drying rapidly due to below average rainfall during May.

RESERVOIR STORAGE

Clear Lake now holds 3,700 acre feet compared with 5,600 a.f. at this time last year. This is likely not an adequate water supply for Clear Lake water users, but it is still hoped that warmer temperatures and precipitation will produce the run-off needed.

STREAMFLOW

Preliminary streamflow figures from the U. S. Geological Survey in Portland, Oregon show that the Hood River near Hood River flowed only 79 percent of average during May and has averaged that same 79 percent for the October-May period.

Streamflow forecasts for the May-September period have been reduced because of the below average May precipitation and runoff. The Hood at Hood River is now expected to flow 240,000 acre feet or 90 percent of the May-September average and the West Fork near Dee, 110,000 acre feet or 89 percent.

White River is forecast to flow 120,000 acre feet or 92 percent for the same period.

Smaller streams such as Mill, Mile, Badger, and Gate creeks will likely recede sooner than previously expected as a result of below average spring precipitation.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch	Average	Average
Badger Creek	Average	Fair
Dee Irrigation District	Average	Average
East Fork Irrig. Dist.	Average	Average
Farmers Irrig. Dist.	Average	Average
Hood River Irrig. Dist.	Average	Average
Juniper Flat Irrig. Dist.	Average	Fair
Middle Fork Irrig. Dist.	Average	Average
Mile Creeks	Average	Fair
Mill Creek	Average	Fair
Mount Hood Irrig. Dist.	Average	Average
Rock-Gate-Threemile Crs.	Average	Fair
Tygh Creek	Average	Fair
White River	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	11.8	3.7	5.6	- -

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
1210	Hood near Hood River[d]	240	May-Sept.	268	90
		190	May-July	213	89
1185	Hood, West Fork near Dee	110	May-Sept.	124	89
		90	May-July	101	88
1015	White below Tygh Valley	120	May-Sept.	130	92
		105	May-July	112	93

SNOW

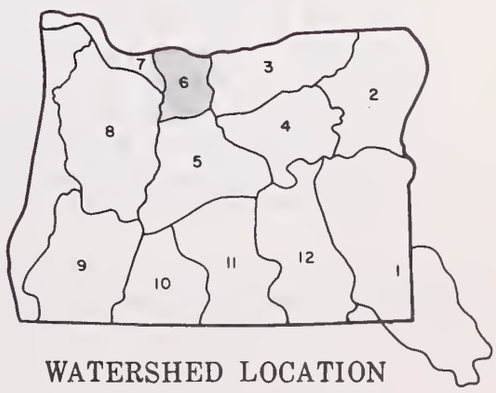
SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Clear Lake	3500	5/28	1	0.4	0.0	- -
Clear Lake (Experimental)	3500	5/28	4	2.4	0.0	- -
Phlox Point	5600	5/28	152	83.3	10.3	- -
Still Creek	3700	5/28	35	18.4	0.0	- -

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Aeriol Snow Depth Gage
- Soil Moisture Station



WATERSHED LOCATION

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
LOWER COLUMBIA WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Water supply outlook is good throughout the Columbia Basin for both irrigation and power. Early season runoff has been low over the basin, and particularly in central and southern Oregon. This has been the result of both below normal temperatures and precipitation during the last two weeks of May.

SNOW COVER

Snow cover remains relatively high over the upper Columbia Basin in United States and Canada and slightly above average on the Snake River and its tributaries in Idaho. In the upper basin, remaining snowpack is comparable to 1950, 1953, 1954, and 1959.

STREAMFLOW

After deficient streamflow in the Columbia and tributaries through the winter six months and through April and May, streamflow has come up to near average near the first of June. Temperature sequences and precipitation to date have tended to delay snowmelt with peak flow of the Columbia now expected in the latter half of June. A higher than average peak flow is still expected, but the prospects of regulated flows approaching those of 1950 and 1956 have been materially reduced as the present temperature sequence continues. As mentioned above, both temperature and precipitation were below average the last two weeks of May, with no extended period of above average temperatures.

The Cooperative Columbia River Forecasting Unit of the U. S. Weather Bureau and U. S. Army Corps of Engineers expects that the peak flow of the Columbia at The Dalles, Oregon will have a fifty percent chance of being between 550,000 and 650,000 cubic feet per second, with such regulation as can be effected by upstream reservoirs. Although there is theoretically one chance in four that the regulated peak flow will be less than 550,000 acre feet, this figure is expected to be reached in a few days. Similarly, the chances of exceeding 650,000 a.f. are also diminishing with the present temperature outlook and a continuing reduction in snow covered mountain area. Unless there is an extreme deviation from average precipitation and temperature in mid-June, regulated flow will fall in the range indicated.

River stages associated with these flows are shown in tables on the reverse side of this sheet.

Report prepared by
HOMER J. STOCKWELL
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
1057	Columbia at The Dalles	58,000 96,000	May-June May-Sept.	58,000 92,000	100 104

HISTORICAL DATA (Columbia River at The Dalles)

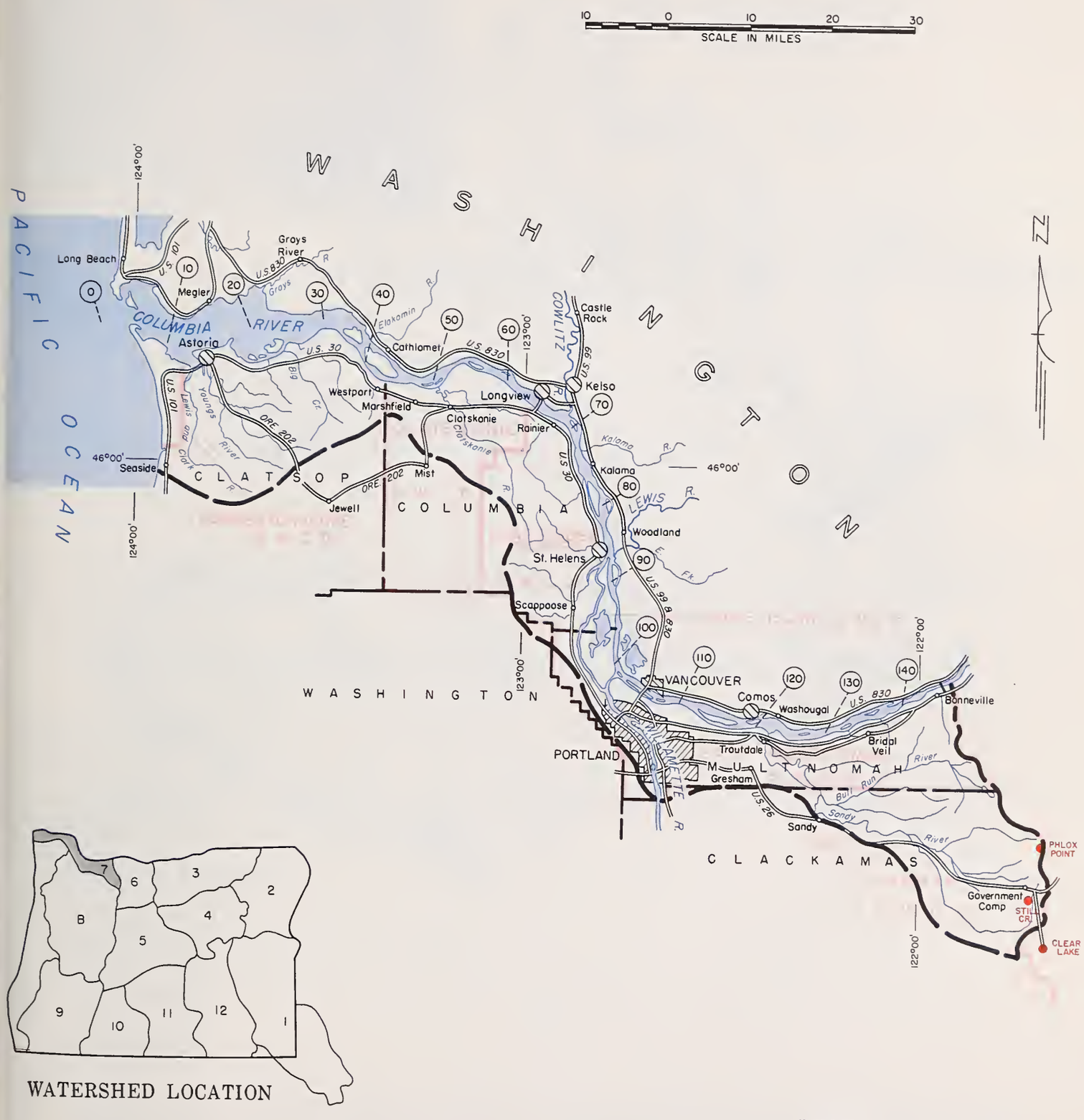
YEAR	STREAMFLOW[d] (1,000 A.F.) APR. — SEPT.	APR. — JUNE	MAY — JUNE	PEAK (1,000 c.f.s)	DATE
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943-57 Avg.	106,100	72,000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6
1961	101,400	74,400	64,000	699	June 8
1962	94,600	64,100	49,200	460	June 5

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)

VANCOUVER GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s)	DRAINAGE DISTRICT PUMPHOUSE SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES 118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	943	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	897	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	853	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	811	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	771	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	733	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	697	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	662	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	628	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	595	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20 (1954)	564	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	534	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	501	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	479	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	452	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

LOWER COLUMBIA WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundory
- Sub-watershed Boundory
- Soil Conservation District Bdry.
- County Boundory
- (50) River Miles
- Snow Course

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
WILLAMETTE WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for the Willamette Valley has been dimmed slightly but is still "near average." May precipitation was only about half the average resulting in reduced streamflow for the month and a reduction in the seasonal streamflow forecast.

SNOW COVER

Snow measurements taken about June 1 indicate a better than average snow cover exists along the summit of the Cascades, although not too many years of record exists for June 1.

Phlox Point snow course on Mount Hood has been measured 15 times on June 1 since 1937, and this year's measurement is the greatest on record showing 152 inches of depth and 83.3 inches of water equivalent.

SOIL MOISTURE

Lower elevation soils, below the remaining snowpack, are beginning to dry out due to less than average rainfall. Soils higher on the watershed are still absorbing moisture from the slowly melting snow.

RESERVOIR STORAGE

Willamette Valley reservoirs are filling according to a pre-determined plan designated by the Corps of Engineers.

Timothy Lake now holds 53,900 acre feet as compared to 61,600 acre feet last year at this time.

STREAMFLOW

Preliminary streamflow data from the U. S. Geological Survey in Portland, Oregon indicates that the Middle Fork of the Willamette flowed 92 percent of average last month and has averaged 72 percent for the October-May period.

Streamflow forecasts have been reduced due to low precipitation during May and now range from 87 percent of average for the Willamette at Salem to 92 percent for the Clackamas at Big Bottom for the April-September period.

continued on next page

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

The Clackamas at Estacada is forecast at 91 percent of average or 800,000 acre feet and the Oak Grove Fork and Clackamas above Three Lynx are both forecast to flow 90 percent of the April-September average.

The McKenzie is expected to flow 90 and 91 percent at Vida and McKenzie Bridge respectively, for the same period. The South Santiam is forecast at 91 percent of average and the North Santiam, 90 percent of average for the April-September period.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya	Average	Average
Clackamas	Average	Average
McKenzie	Average	Average
Molalla	Average	Average
Santiam, North	Average	Average
Santiam, South	Average	Average
Willamette, Coast Fork	Average	Average
Willamette, Middle Fork	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottage Grove	30.8*	26.5	29.1	29.3
Cougar	219.3*	107.5	- -	- -
Detroit	299.9*	260.2	297.6	253.5
Dorena	70.5*	68.4	66.0	64.7
Fern Ridge	94.2*	79.6	95.2	87.2
Hills Creek	249.0*	171.3	193.8	- -
Lookout Point	337.2*	292.0	326.0	- -
Timothy Lake	61.6	53.9	61.6	- -

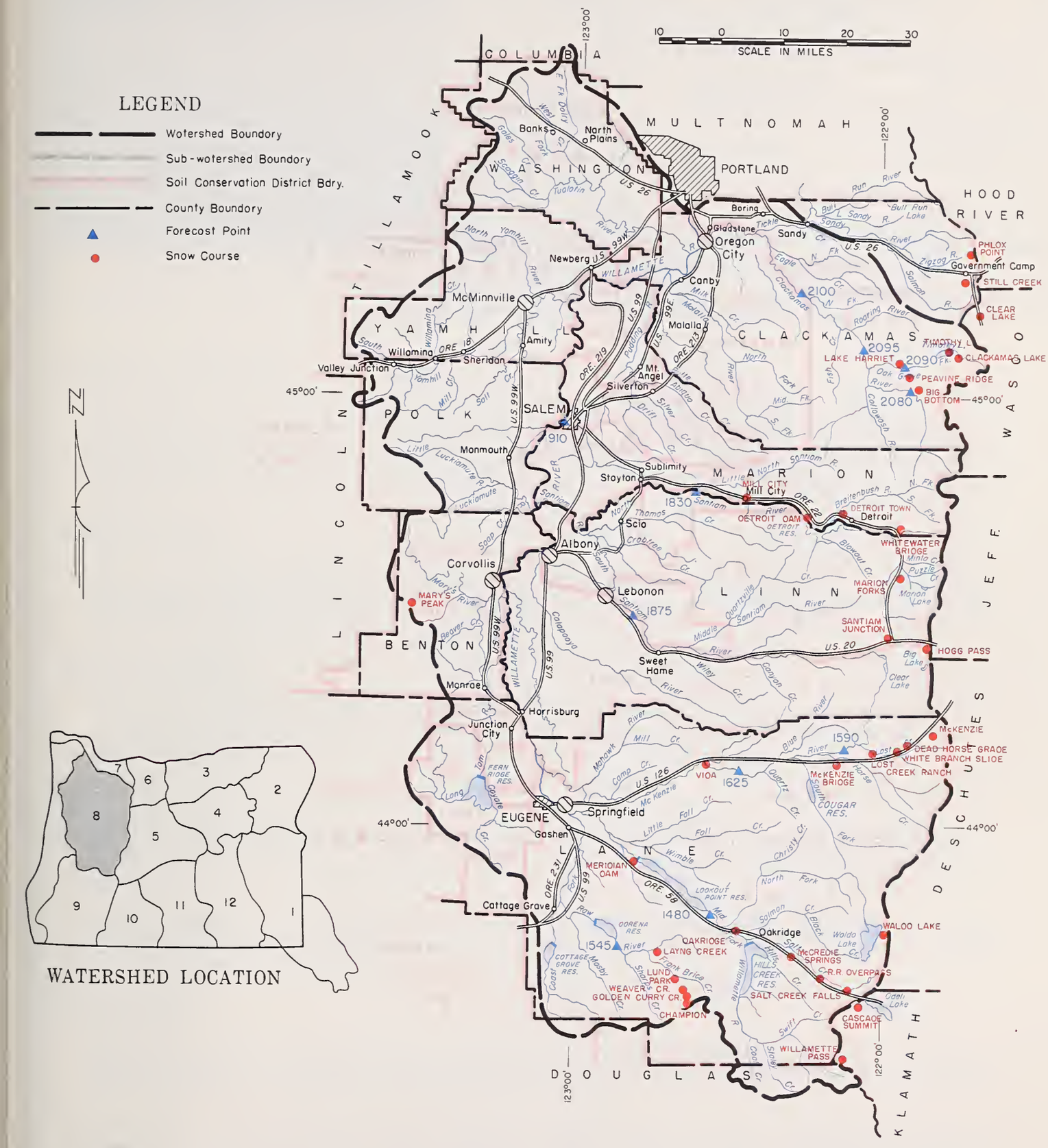
*Multiple purpose reservoir--space reserved primarily for flood runoff.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
2080	Clackamas at Big Bottom	170	April-Sept.	184	92
		138	April-July	150	92
2100	Clackamas at Estacada	800	April-Sept.	879	91
		694	April-July	763	91
2095	Clackamas above Three Lynx	607	April-Sept.	674	90
		520	April-July	578	90
1590	McKenzie at McKenzie Bridge	582	April-Sept.	640	91
		444	April-July	488	91
1625	McKenzie near Vida	1225	April-Sept.	1362	90
		1008	April-July	1120	90
2090	Oak Grove Fork above Power Intake	178	April-Sept.	198	90
		140	April-July	156	90
1545	Row near Dorena	103	April-Sept.	114	90
		98	April-July	109	90
1830	Santiam, North at Mehama[d]	871	April-Sept.	968	90
		779	April-July	866	90
1875	Santiam, South at Waterloo	593	April-Sept.	652	91
		560	April-July	616	91
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	820	April-Sept.	909	90
		724	April-July	804	90
1910	Willamette at Salem[d]	4750	April-Sept.	5461	87
		4300	April-July	4942	87

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

WILLAMETTE WATERSHEDS



SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Big Bottom	2118	5/30	0	0.0	- -	- -
Cascade Summit	4880	5/28	29	14.6	0.0	- -
Clear Lake	3500	5/28	1	0.4	0.0	- -
Clear Lake (Experimental)	3500	5/28	4	2.4	0.0	- -
Lake Harriet	2045	5/29	0	0.0	- -	- -
McCredie Springs	2120	5/28	0	0.0	0.0	- -
Meridian Dam	750	5/28	0	0.0	0.0	- -
Oakridge	1310	5/28	0	0.0	0.0	- -
Peavine Ridge	3500	5/29	21	10.3	- -	- -
Phlox Point	5600	5/28	152	83.3	10.3	- -
Railroad Overpass	2750	5/28	0	0.0	0.0	- -
Salt Creek Falls	4000	5/28	13	6.4	0.0	- -
Still Creek	3700	5/28	35	18.4	0.0	- -
Timothy Lake	3295	5/29	9	4.6	- -	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
ROGUE, UMPQUA, WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for the Rogue and Umpqua basins is "very good" for water users with reservoir storage and "near average" for those using natural streamflow. About half-average May precipitation reduced streamflow from May 1 expectations and caused slight reductions in forecasts for the remainder of the season.

SNOW COVER

Snow is still in evidence at the higher elevations and more protected areas of the watershed, but only the Red Butte profile was surveyed on June 1, and there was no snow at that elevation.

SOIL MOISTURE

Lower elevation soils have started to dry out due to the lack of rainfall, but soils at higher elevations near the snow are still absorbing moisture from the slowly melting snow.

RESERVOIR STORAGE

Fish and Fourmile lakes now hold 22,000 acre feet of water for use by Medford and Rogue River Valley Irrigation Districts compared with 19,300 a.f. last year on June 1.

Hyatt, Howard, and Emigrant reservoirs now hold 112,500 acre feet compared with 114,600 acre feet last year at this time. This should be an adequate water supply for Talent Irrigation District.

STREAMFLOW

Preliminary data from the U. S. Geological Survey in Portland, Oregon indicates that the Rogue at Raygold flowed about 89 percent of average during May and has averaged 84 percent for the October-May period.

Streamflow forecasts have been dropped slightly due to below average May precipitation. The forecasts now range from 81 percent for the inflow to Fourmile and Hyatt reservoirs for the April-September period to 95 percent for the April-July period on the South Fork of Little Butte Creek.

continued on next page

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE · PORTLAND 4, OREGON

The Rogue above Prospect is forcast to flow 243,000 acre feet or 90 percent of average and the Rogue at Raygold, 638,000 acre feet or 87 percent of the May-September period.

The Umpqua is expected to flow 140,000 acre feet or 90 percent of average for the May-September period.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek	Average	Average
Applegate River, Big	Average	Average
Applegate River, Little	Average	Average
Ashland Creek	Average	Average
Butte Creek, Little	Average	Average
Butte Creek, Big	Average	Average
Cow Creek	Average	Average
Deer Creek	Average	Average
Elk Creek	Average	Average
Emigrant Creek (above Res.)	Average	Average
Evans Creek	Average	Average
Gold Hill Irrigation Dist.	Average	Average
Grants Pass Irrig. Dist.	Average	Average
Grave Creek	Average	Average
Illinois River, East Fork	Average	Average
Illinois River, West Fork	Average	Average
Jump-off-Joe Creek	Average	Average
Neil Creek	Average	Average
Red Blanket Creek	Average	Average
Rogue River	Average	Average
Sucker Creek	Average	Average
Table Rock Irrig. Dist.	Average	Average
Thompson Creek	Average	Average
Wagner Creek	Average	Average
Williams Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

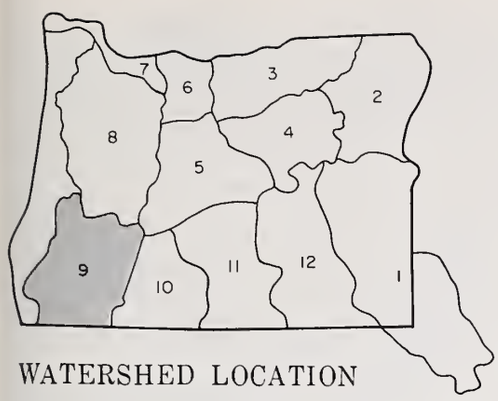
RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Emigrant Gap	39.0	35.7	37.5	7.1
Fish Lake	7.8	6.4	6.3	6.9
Fourmile Lake	16.1	15.6	13.0	13.3
Howard Prairie	60.0	60.6	61.6	- -
Hyatt Prairie	16.1	16.2	15.5	12.9

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

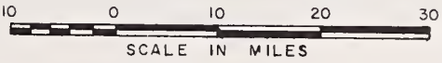
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
3620	Applegate near Copper	115	April-Sept.	131	88
3145	Clearwater above Trap Creek[d]	53	May-Sept.	61	87
5045	Fourmile Lake net Inflow[d]	6.0	April-Sept.	7.4	81
5140	Hyatt Reservoir net Inflow[d]	5.0	April-Sept.	6.2	81
3770	Illinois River at Kerby	170	April-Sept.	196	87
		165	April-July	190	87
3425	Little Butte, N. Fk. at Fish Lake nr. Lake Cr.[d]	15.2	April-Sept.	16.9	90
3415	Little Butte, So. Fk. nr. Lake Creek	40	April-July	42	95
	Note: Minimum flow will drop to 100 c. f. s. by June 8.				
3280	Rogue above Prospect	243	May-Sept.	270	90
		190	May-July	211	90
3320	Rogue, South Fork near Prospect[d]	57	May-Sept.	65	88
		47	May-July	53	88
3350	Rogue below South Fork	520	May-Sept.	584	89
		394	May-July	443	89
3590	Rogue at Raygold near Central Point	638	May-Sept.	733	87
		497	May-July	571	87
3615	Rogue at Grants Pass	598	May-Sept.	687	87
3135	Umpqua, No. blw. Lemolo Res. nr. Toketee Falls[d]	140	May-Sept.	157	90

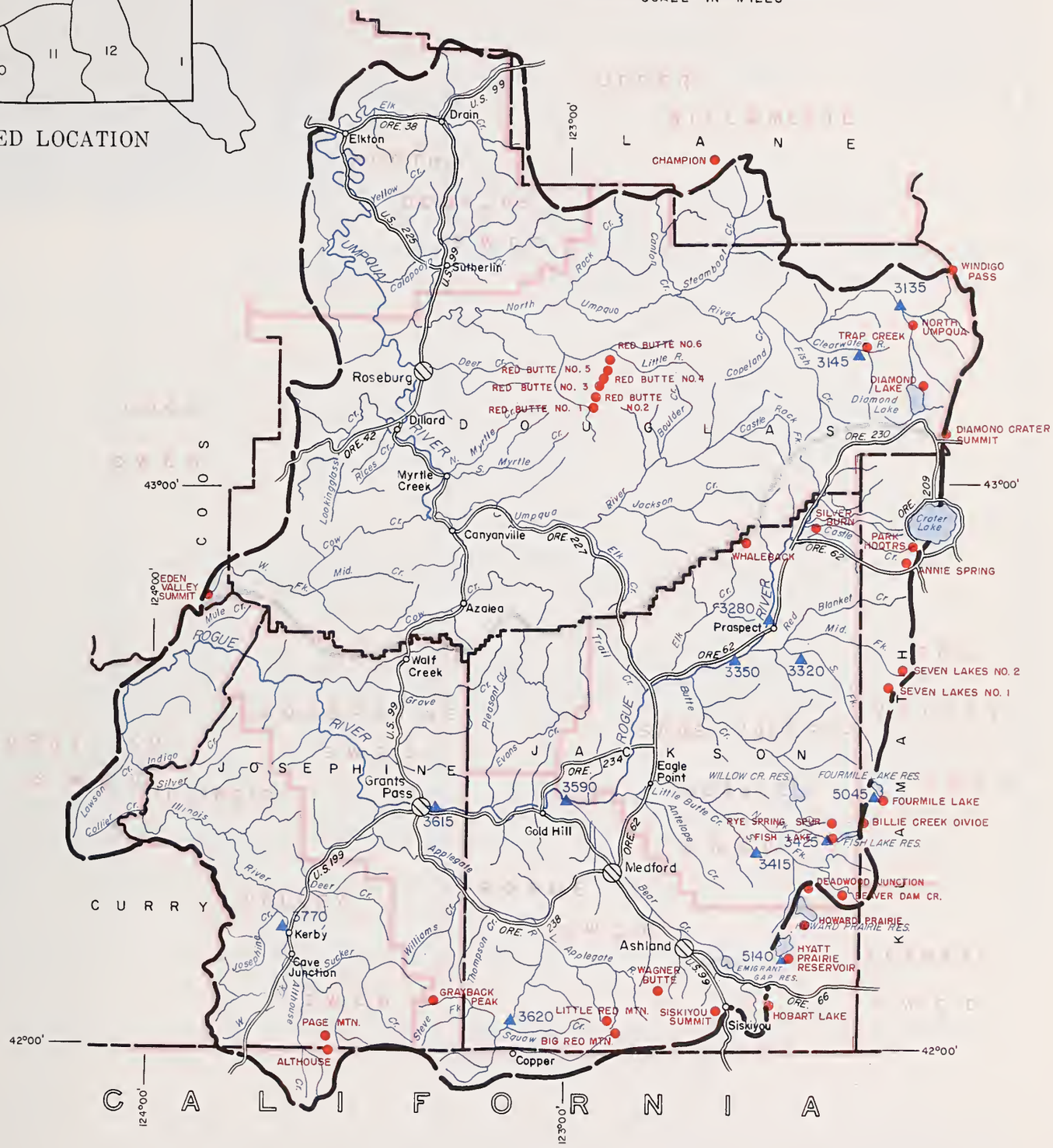
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

ROGUE, UMPQUA WATERSHEDS



WATERSHED LOCATION





LEGEND

- Watershed Boundory
- Sub-watershed Boundory
- Soil Conservation District Bdry
- County Boundory
- Forecast Point
- Snow Course

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Red Butte #1	4560	5/26	0	0.0	- -	- -
Red Butte #2	4000	5/26	0	0.0	- -	- -
Red Butte #3	3500	5/26	0	0.0	- -	- -
Red Butte #4	3000	5/26	0	0.0	- -	- -
Red Butte #5	2500	5/26	0	0.0	- -	- -
Red Butte #6	2000	5/26	0	0.0	- -	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
KLAMATH WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season is well underway in Klamath County and water supply outlook is still "near average" for lands served by reservoirs. The outlook for lands served by diversion from natural streamflow however, has now dropped to only "fair" in the late season. Below average precipitation is causing streams to recede faster than earlier predictions indicated.

SNOW COVER

Snow remains on only the higher and more protected elevations of the watershed and no snow surveys were scheduled for June 1 in this area.

SOIL MOISTURE

Lower elevation soils are drying rapidly due to below average rainfall and drying winds. Soils up near the remaining snow banks in the Cascades are soaking up much of the delayed snowmelt water.

RESERVOIR STORAGE

Upper Klamath now holds 503,900 acre feet or 97 percent of the 15 year average. Last year it held 553,000 acre feet on June 1.

Gerber has 60,500 acre feet in storage and is also 97 percent of average. Last year it held 67,500 acre feet at this time.

Clear Lake now holds 153,000 acre feet, which is only 56 percent of average and 96 percent of last year's storage on June 1.

This is expected to be an adequate irrigation water supply for this season although Clear Lake is expected to have little if any carryover this fall.

STREAMFLOW

Preliminary data from Pacific Power and Light Company indicates that the May inflow to Upper Klamath Lake was 100,900 acre feet or about 59 percent of the 1943-57 average for the month.

Streamflow forecasts have again been reduced due to less than average precipitation occuring over the basin causing less than previously expected flows on most streams.

The inflow to Upper Klamath is now expected to be about 300,000 acre feet for the May-September period or 70 percent of average with the Williamson contributing

continued on next page

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

240,000 acre feet of this amount. The Sprague is forecast to flow 138,000 acre feet or 72 percent of average.

Gerber inflow is expected to be only 4,000 acre feet for the May-September period. This is only 52 percent of the 15 year average and inflow may be even less if less than average rainfall continues during the season.

Clear Lake inflow is forecast at only 44 percent of average or 8,500 acre feet. The May inflow was much less than expected causing a large drop in the May-September forecast.

Smaller streams heading at lower elevations are now expected to fall off earlier than previous forecasts indicated and some late season shortages can be expected on these streams unless timely rainfall occurs during the season in amounts sufficient to sustain the flow.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley	Average	Average
Lost River (Clear Lake)	Average	Fair
Lost River (Gerber)	Average	Average
Lost River (Willow Res.)	Average	Fair
Sprague River	Average	Fair
Upper Klamath Lake	Average	Average
Williamson River	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	440.2	153.0	159.0	272.3
Gerber	94.0	60.5	67.5	62.3
Upper Klamath Lake	584.0	503.9	553.0	520.3

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

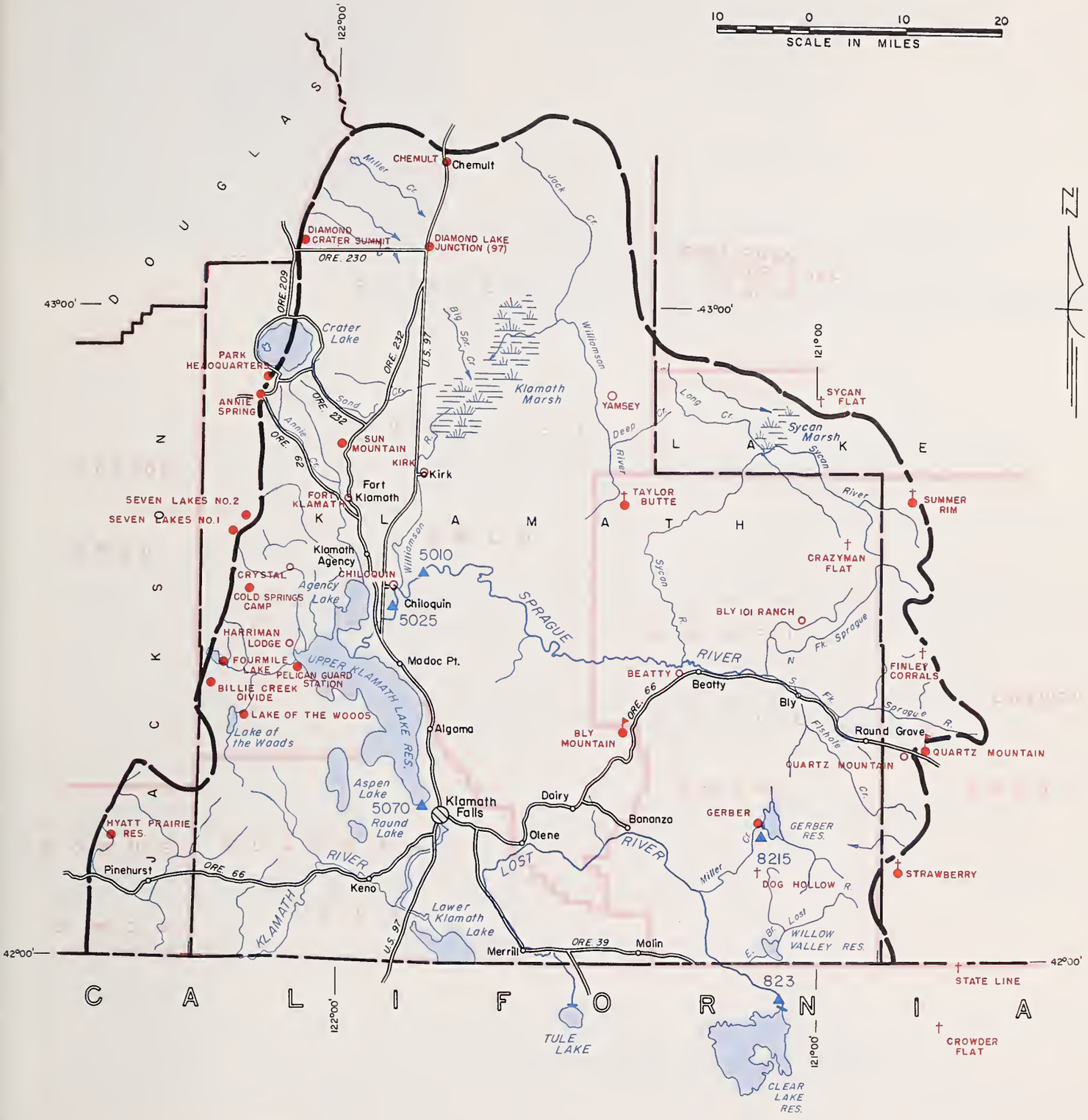
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
823	Clear Lake Reservoir Inflow[k]	8.5	May-Sept.	19.3	44
8215	Gerber Reservoir Inflow[k]	4.0	May-Sept.	7.7	52
5010	Sprague near Chiloquin	138	May-Sept.	191	72
5070	Upper Klamath Lake net Inflow[k]	300	May-Sept.	431	70
5025	Williamson below Sprague River	240	May-Sept.	330	73

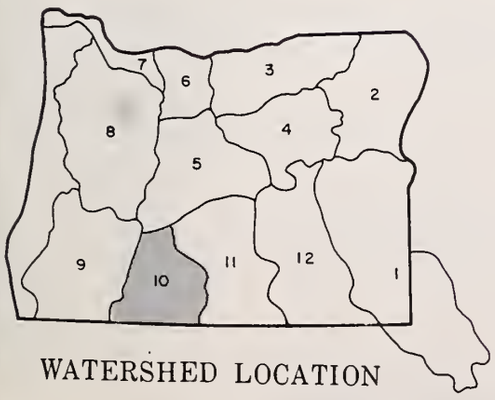
SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bly Mountain	5090	42	14.0	4-30-64	12.6[f]	12.9[f]	12.6[f]

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

KLAMATH WATERSHEDS





WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Baundary
- Soil Conservation District Bdry
- County Baundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- COPCO Snow Station
- Soil Moisture Station

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
LAKE COUNTY, GOOSE LAKE WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook in Lake County is still "near average", although streamflow forecasts were dropped due to cool and relatively dry weather until late in the month. Reservoir storage is above average and adequate supplies are in prospect for Lakeview Water Users.

SNOW COVER

Snow is all but gone in Lake County and maybe found on only the most protected areas of the higher elevations.

SOIL MOISTURE

Cool temperatures have helped maintain soil moisture at higher elevations and Camas Creek soil moisture station still indicates 88 percent of capacity.

RESERVOIR STORAGE

Drews Reservoir now has 57,900 acre feet in storage compared with 65,200 acre feet last year on June 1 and an average of 56,200 acre feet.

Cottonwood has 3,900 acre feet compared with 8,900 a.f. last year and an average of 3,800 acre feet before the increase in storage capacity.

Muddy Creek Reservoir is reported to be full and spilling.

STREAMFLOW

Streamflow forecasts have been reduced due to less than average precipitation during most of May. Forecasts now range from 76 percent or 8,000 a.f. on Twentymile Creek to 85 percent or 10,300 acre feet for the inflow to Drews Reservoir for the May-June period.

Deep and Honey creeks are expected to flow 35,000 and 7,800 acre feet or 81 and 80 percent of their respective May-June averages.

The Chewaucan is forecast to flow 52,000 acre feet or 80 percent of the May-September period.

The flow of these streams and other smaller ones of the area are now expected to recede earlier than previous forecasts indicated unless above average precipitation occurs during the flow period.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE . PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan River	Average	Average
Crooked Creek	Average	Fair
Deep Creek	Average	Average
Dry Creek	Average	Fair
East Side Goose Lake	Average	Fair
Guano Lake	Average	Fair
Honey Creek	Average	Average
Lakeview Water Users Assn.	Average	Average
Rock Creek (Hart Mtn.)	Average	Fair
Silver-Buck Creeks	Average	Fair
Summer Lake	Average	Fair
Thomas Creek	Average	Average
Twentymile Creek	Average	Fair
Warner Lakes	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottonwood	9.1*	3.9	8.9	3.8
Drew	63.0	57.9	65.2	56.2

*Usable capacity for Cottonwood Reservoir changed from 8.7 to 9.1 because of earth spillway plug.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

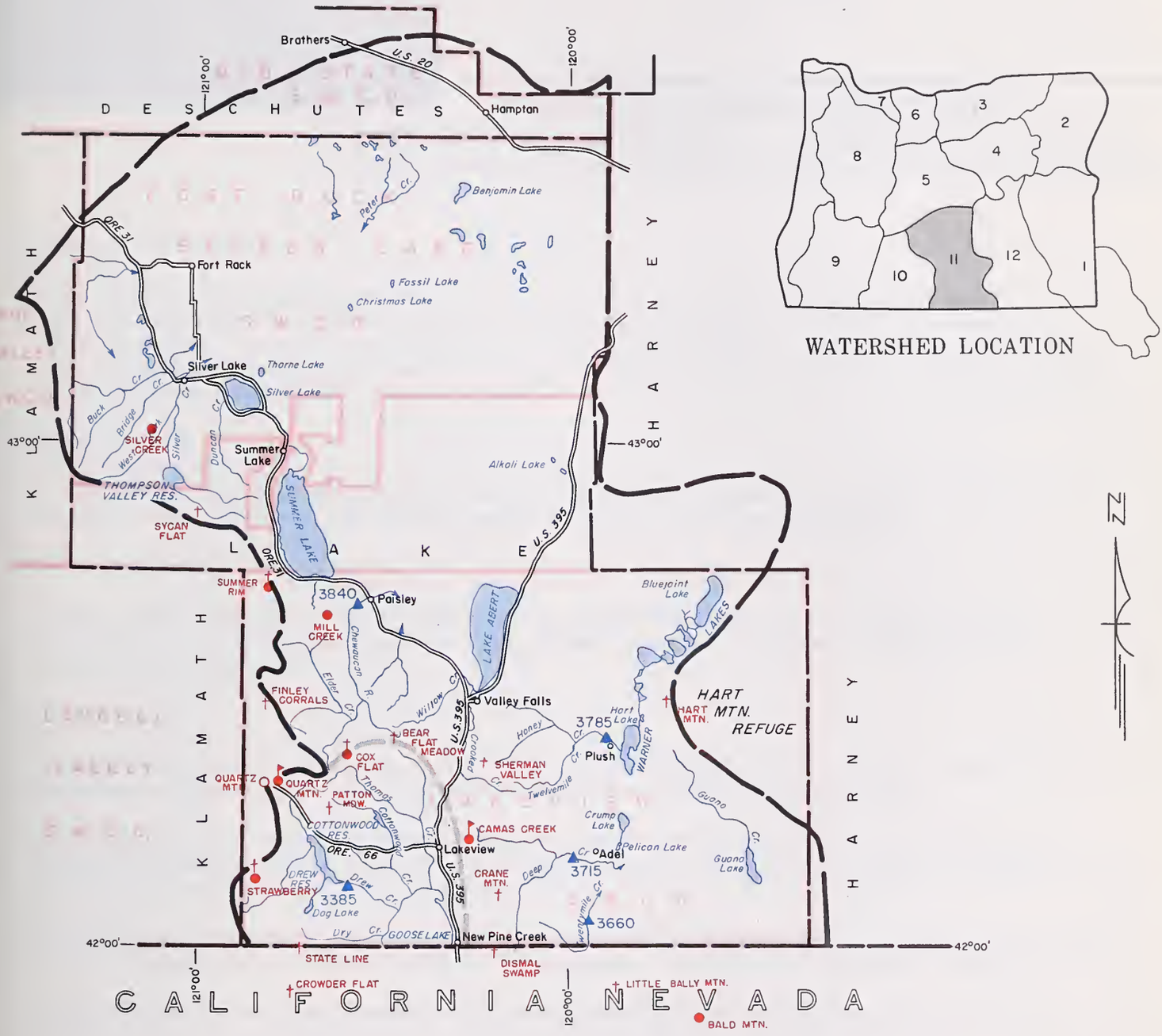
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
3840	Chewaucan near Paisley	52	May-Sept.	65	80
3715	Deep above Adel	35	May-June	43	81
3385	Drew Reservoir net Inflow	10.3	May-June	12.1	85
3785	Honey near Plush	7.8	May-June	9.8	80
3660	Twentymile near Adel	8.0	May-June	10.5	76

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Camas Creek	5720	42	14.5	6-1-64	12.8	12.9	13.1
Quartz Mountain	5320	48	15.3	6-4-64	9.3	11.0[f]	10.5

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

LAKE COUNTY, GOOSE LAKE WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- COPCO Snow Station
- Soil Moisture Station

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
HARNEY BASIN WATERSHEDS
OREGON

as of
JUNE 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for Harney County is now only "fair to poor." Drying winds and less than average precipitation reduced streamflow much more than previous forecasts indicated. As a result, streams are now expected to fall off much sooner and cause water shortages, unless rainfall occurs during the season to give much needed moisture to crops.

SNOW COVER

Snow cover still remains at the higher elevations and more protected areas of the Steens, but no measurements are taken on June 1 in Harney County.

SOIL MOISTURE

Lower elevation soils are drying out rapidly due to less than average rainfall, although a storm in the last few days of May gave much relief to the northern end of the county.

STREAMFLOW

Streams have not produced as much flow as was expected from the good early snowpack and forecasts for the irrigation season have been reduced again.

The Silvies is forecast to flow 75,000 acre feet or 70 percent of average for the April-September period and Silver Creek is expected to flow 18,200 acre feet or 70 percent for the April-July period.

The Blitzen is forecast to flow 57,000 acre feet or 85 percent of average and Trout Creek is expected to flow 7,800 or 85 percent of the April-September average.

Flow of smaller streams heading at lower elevations will recede sooner than previously expected if less than average rainfall persists during the season.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley	Average	Fair
Cow Creek	Average	Fair
Donner und Blitzen River	Average	Average
Mill-Coffeepot Creeks	Average	Fair
Rattlesnake Creek	Average	Fair
Silver Creek	Average	Fair
Silvies River	Average	Fair
Soldier-Prather Creeks	Average	Fair
Trout Creek	Average	Average
Whitehorse Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of June 1, 1964

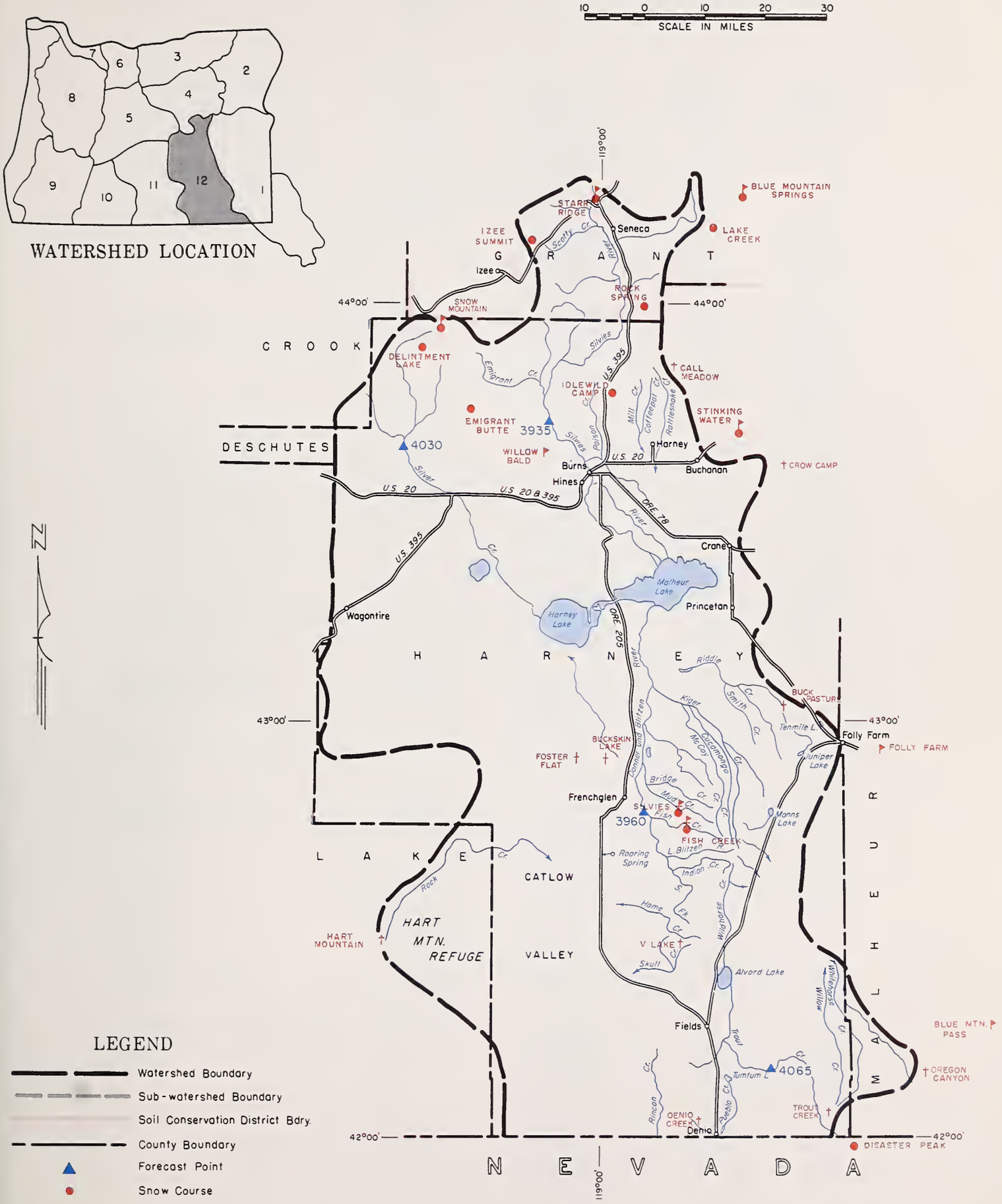
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
3960	Donner und Blitzen near Frenchglen	57	April-Sept.	67	85
		47	April-June	55	85
4030	Silver near Riley	18.2	April-July	26	70
3935	Silvies near Burns	75	April-Sept.	107	70
		72	April-June	103	70
4065	Trout near Denio	7.8	April-Sept.	9.2	85
		7.2	April-July	8.5	85

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Springs	5900	42	16.9	5-27-64	12.5 f	14.4 f	13.8
Fish Creek	7600	48	15.0	3-30-64	9.2 f	12.7 f	8.8 f
Folly Farm	4450	36	12.5	3-8-64	8.3 f	9.8 f	11.6 f
Silvies	6900	48	16.4	3-30-64	10.4 f	13.3 f	12.7 f
Snow Mountain	6300	48	16.7	3-31-64	12.4 f	14.9 f	15.1 f
Starr Ridge	5150	36	10.6	5-26-64	10.4 f	10.4 f	10.5
Stinking Water	4800	48	21.9	3-25-64	20.8 f	21.9 f	21.9 f
Willow-Bald	5000	24	6.6	5-1-64	6.4 f	6.4 f	6.1 f

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

HARNEY BASIN WATERSHEDS



"The Conservation of Water begins with the Snow Survey"

PREVIOUSLY UNPUBLISHED OREGON SNOW SURVEY DATA
1963-64 Season

SNOW COURSE Name	No.	Date	Depth (In.)	Water (In.)
Bald Mtn. (Ore.)	17D10	12/1/63	30	7.5
Cascade Summit	22F3	1/13/64	46	10.5
		2/13/64	72	23.5
		3/13/64	115	33.9
		4/13/64	87	37.8
Champion	22F9	1/15/64	39	10.6
		2/14/64	74	26.4
		3/13/64	136	40.1
		4/16/64	95	43.5
Clover Creek	17E2	2/2/64	16	4.4
Cooper Spur	21D25	10/31/63	0	0.0
		11/15/63	T	T
		12/2/63	T	T
		12/16/63	7	1.8
		1/15/64	18	5.0
		2/14/64	28	10.4
		3/16/64	34	13.7
Detroit City	22E1	1/13/64	4	0.9
		2/14/64	T	T
		3/13/64	6	1.0
		4/13/64	0	0.0
Detroit Dam	22E2	1/13/64	0	0.0
		2/14/64	0	0.0
		3/13/64	4	0.7
		4/13/64	0	0.0
Fish Lake	22G14	4/14/64	49	22.4
Gerber Dam	21G4	1/17/64	11	2.6
Golden Curry Creek	22F10	1/15/64	4	1.0
		2/14/64	28	10.0
		3/13/64	61	18.0
		4/16/64	33	14.2
Goodrich Lake	18E6	1/3/64	35	11.1
		5/13/64	67	34.2

SNOW COURSE Name	No.	Date	Depth (In.)	Water (In.)
Hogg Pass	21E6	1/13/64	59	15.8
		2/14/64	94	35.8
		3/13/64	151	44.5
		4/13/64	119	50.5
King Mtn. #1	22G30	1/5/64	3	0.6
Lake of the Woods	22G15	1/14/64	17	4.6
		2/15/64	44	13.6
		3/15/64	51	16.2
		4/15/64	35	14.5
Lambert Point	21D26	12/17/63	36	9.0
Layng Creek R.S.	22F13	1/15/64	0	0.0
		2/14/64	0	0.0
		3/13/64	0	0.0
		4/16/64	0	0.0
Lund Park	22F12	1/15/64	0	0.0
		2/14/64	0	0.0
		3/13/64	T	T
		4/16/64	0	0.0
Marion Forks	21E4	1/13/64	18	4.4
McCredie Springs	22F6	1/13/64	4	0.6
		2/13/64	T	T
		3/13/64	0	0.0
		4/13/64	0	0.0
Meridian Dam	22F8	1/13/64	0	0.0
		2/13/64	0	0.0
		3/13/64	0	0.0
		4/13/64	0	0.0
Mill City	22E3	1/13/64	0	0.0
		2/14/64	0	0.0
		3/13/64	0	0.0
		4/13/64	0	0.0
Oakridge	22F7	1/13/64	0	0.0
		2/13/64	0	0.0
		3/13/64	0	0.0
		4/13/64	0	0.0
Parkdale	21D23	10/31/63	0	0.0
		11/15/63	0	0.0
		12/2/63	0	0.0
		12/16/63	T	T
		1/15/64	0	0.0
		2/14/64	0	0.0
		3/16/64	0	0.0

SNOW COURSE Name	No.	Date	Depth (In.)	Water (In.)
Phlox Point	21D8	11/15/63	24	7.4
		5/15/64	180	92.2
Quartz Mountain	20G6	1/16/64	8	1.5
		2/17/64	26	6.3
		3/14/64	32	8.4
		4/17/64	5	2.2
Quartz Mountain (PP&L)	9	1/14/64	9	1.5
		2/17/64	26	6.9
		3/14/64	32	8.8
		4/17/64	6	2.4
Railroad Overpass	22F5	1/13/64	11	3.1
		2/13/64	19	6.2
		3/13/64	36	10.5
		4/13/64	0	0.0
Rye Spring Spur	22G29	4/14/64	47	22.2
Salt Creek Falls	22F4	1/13/64	26	6.2
		2/13/64	45	14.6
		3/13/64	87	23.5
		4/13/64	66	27.2
Santiam Junction	21E5	1/13/64	38	7.7
		2/14/64	63	22.4
		3/13/64	106	32.2
		4/13/64	64	27.0
Siskiyou Summit (Alt.)	22G23	1/12/64	7	1.6
		2/10/64	24	8.3
		3/14/64	29	9.2
		4/15/64	0	0.0
Switchback	21D28	11/15/63	T	T
		12/2/63	T	T
		12/16/63	7	1.9
		1/15/64	25	7.5
Upper Valley	21D24	10/31/63	0	0.0
		11/15/63	0	0.0
		12/2/63	0	0.0
		12/16/63	6	1.0
		1/15/64	10	2.2
		2/14/64	8	2.8
		3/16/64	0	0.0
Weaver Creek	22F11	1/15/64	T	T
		2/14/64	5	1.3
		3/13/64	21	5.2
		4/16/64	0	0.0

SNOW COURSE Name	No.	Date	Depth (In.)	Water (In.)
Whitewater Bridge	21E3	1/13/64	9	2.6
		2/14/64	18	7.0
		3/13/64	28	7.8
		4/13/64	0	0.0

ERRATA: 1964 SNOW MEASUREMENTS PUBLISHED IN ERROR

SNOW COURSE Name	No.	Date	Depth (In.)	Water (In.)
Annie Springs	22G6			
Previously Published		12/27/63	42	11.0
Correct Data		12/27/63	42	11.4
Cascade Summit	22F3			
Previously Published		2/27/64	71	28.6
Correct Data		2/27/64	71	26.0
County Line	18D8			
Previously Published		1/3/64	5	1.3
Correct Data		1/3/64	5	1.2
Fourmile Lake	22G12			
Previously Published		3/30/64	50	20.2
Correct Data		3/30/64	88	30.2
Greenpoint Reservoir	21D1			
Previously Published		4/1/64	50	17.7
Correct Data		3/26/64	50	17.7
McKenzie	21E7			
Previously Published		1/29/64	103	35.1
Correct Data		1/29/64	103	35.0
Schoolmarm	18D7			
Previously Published		1/3/64	5	1.0
Correct Data		1/3/64	5	1.1

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

DWYHEE, MALHEUR WATERSHEDS (1)

Owyhee River

1666	Antelope Ridge (Ida)	32	8S	1W	5900
1669a	Battle Creek (Ida)	10	11S	1E	5700
1657MA	Bear Creek (Nev)	31	46N	58E	7800
1658M	Big Sand (Nev)	30	45N	56E	6700
1702a	Blue Mtn Pass	4	38S	42E	5290
1702	Bucksk1n, Lower (Nev)	25	45N	39E	6700
1703	Buckskin, Upper (Nev)	11	45N	39E	7200
1711	Bull Basin (Ida)	25	12S	5W	5600
1661Oa	Bull Basin (Nev)	8	47N	34E	6500
1651	Diesster Peak	4	33S	33E	7900
1652MA	Fish Creek	8	39S	38E	4450
1653a	Folly Farm Summit	8	39S	38E	6800
1592	Fox Creek (Nev)	33	46N	58E	6700
1597	Fry Canyon (Nev)	31	43N	54E	6700
1587	Gold Creek (Nev)	31	45N	56E	6600
1595	Granite Peak (Nev)	22	44N	39E	7800
1782	Hyde Pasture (Ida)	31	8S	2W	5800
1655a	Jack Creek, Lower (Nev)	18	42N	53E	6800
1681M	Jack Creek, Upper (Nev)	9	42N	53E	7250
1652	Jack Creek (Nev)	28	42N	53E	8420
1654	Jack Peak	9	30S	46E	4390
1703a	Jordan Valley	2	40S	47E	5650
1706a	Lookout Butte	27	40S	44E	6440
1704a	Louse Canyon	18	44N	40E	6700
1783	Martin Creek (Nev)	18	39N	46E	7200
1693	Midas (Ida)	34	9S	2W	5500
1667M	Mud Flat	8	40S	40E	6950
1705a	Oregon Canyon				

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.
17H6a	Quinn Ridge (Nev)	9	47N	41E	6300
1661la	Red Canyon (Ida)	32	11S	4W	6500
15H3M	Rodeo Flat (Nev)	36	43N	53E	6000
15H3A	76 Creek (Nev)	6	44N	58E	7100
16F3	Silver City (Ida)	6	5S	3W	6400
18C1MA	Silvies	35	32S	32½E	6900
1661	South Mountain No.2 (Ida)	35	7S	5W	6340
16F6a	Succor Creek (Ida)	25	3S	5W	6100
15H9M	Taylor Canyon (Nev)	35	39N	53E	6200
15H8	Trenewan Ranch (Nev)	9	39N	55E	5700
1664MA	Triangle (Ida)	25	7S	3W	5150
18C5a	Trout Creek	10	21S	38E	7800
18C7a	WYH Lake	31	35½S	32½E	6600

Malheur River

18E14	Barney Creek	16	14S	36E	5950
18E16M	Blue Mountain Spring	21	15S	35E	5900
18F6a	Buck Pasture	21	29S	35E	5700
18E21a	Bully Creek	10	17S	37E	5300
18F7a	Call Meadows	29	20S	33E	5340
17F2a	Cottonwood-Indian	10	19S	39E	4320
18E19M	Crane Prairie	24	16S	34E	5375
18F8a	Crow Camp		Unsurveyed		
18I20	Eldorado Pass	20	14S	38E	4600
18E26a	Flag Prairie	32	16S	36E	4750
18E18	Lake Creek	10	16S	33½E	5120
18F22a	Logan Valley	13	16S	33½E	5100
18F1	Rock Spring	23	18S	32E	5100
18F4M	Stinking Water	33	21S	34E	4800

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS (2)

Burnt River

13E14	Barney Creek	16	14S	36E	5950
18E13M	Blue Mountain Summit	6	12S	36E	5098
17E1M	Dooley Mountain	32	11S	40E	5430
18E2O	Eldorado Pass	20	14S	38E	4600
18E8	Gold Center	21	9S	36E	5340
18E9	Tipton	34	10S	35½E	5100

Powder River

18E1	Anthony Lake	18	7S	37E	7125
18E5	Bourne	33	8S	37E	5800
17E1M	Dooley Mountain	32	11S	40E	5430
18E3	Ellertson Meadows	18	8S	38E	5400
18E8	Gold Center	21	9S	36E	5340
18E6	Goodrich Lake	4	9S	36E	6775
17D12m	Ladd Summit	5	5S	39E	3730
18E23	Little Alps	10	7S	37E	6200
18D10	Summit Springs	9	6S	37E	6000
17D7	Taylor Green	3	6S	42E	5740

Pine Creek

17D8	Schneider Meadows	35	6S	45E	5400

Grande Ronde River

17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7300
18E1	Anthony Lake	18	7S	37E	7125
17D10a	Bald Mountain	14 & 15	4S	41E	6700
18D9	Beaver Reservoir	8	5S	37E	5340
18D8	County Line	28	4S	34E	4800
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
17D13a	Mirror Lake	34	4S	42E	8200
17D6M	Moss Spring	28	3S	41E	5850
18D7	Schoolmarm	28	4S	34E	4775
17D11a	Standley	28	2S	42E	7400
17D7	Taylor Green	3	6S	42E	5740
18D3M	Tollgate	32	4N	38E	5070
17D15	TV Ridge	11	2S	43E	5670

Imnaha River

17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7300
17D14	Big Sheep	33	4S	46E	6200

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS (3)

Umatilla River

19D2	Arbuckle Mountain	33	4S	29E	5400
18D14m	Athena-Weston Summit	21	4N	35E	1700
18D12M	Battle Mountain Summit	29	3S	31E	4340
18D4M	Emigrant Springs	29	1N	35E	3925
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
18D3M	Tollgate	32	4N	38E	5070
18D13	Walla Walla Diversion	22	6N	38E	2400

Walla Walla River

18D16	Blue Mountain Camp	35	4N	37E	4300
18D3M	Tollgate	32	4N	38E	5070
18D17	Weston Mountain	25	4N	35E	2700

Willow Creek

19D2	Arbuckle Mountain	33	4S	29E	5400

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

UPPER JOHN DAY WATERSHEDS (4)

Upper John Day River

18E1	Anthony Lake	18	7S	37E	7125
19D2	Arbuckle Mountain	33	4S	29E	5400
18D12M	Battle Mountain Summit	29	3S	31E	4340
19E2M	Beech Creek Summit	4	12S	30E	4800
18E16M	Blue Mountain Spring	21	15S	35E	5900
18E13M	Blue Mountain Summit	6	12S	36E	5098
19E3M	Derr	14	13S	23E	5670
18E27a	East Fork Canyon	15	15S	32E	5700
18E8	Gold Center	21	9S	36E	5340
18E24a	Indian Cr. Butte	5	14S	37E	6550
19E9	Izee Summit	28	16S	29E	5293
18D6	Lucky Strike	28	3S	32E	5050
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
19F1M	Snow Mountain	1	15S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18E9	Tipton	34	10S	35½E	5100
18E25M	Williams Ranch	20	15S	32E	4500

UPPER DESCHUTES, CROOKED WATERSHEDS (5)

Upper Deschutes River

21E11	Black Pine Spring	14	16S	9E	4600
21F8	Caldwell Ranch	30	21S	8E	4400
22F3	Cascade Summit	7	23S	6E	4280
21F7	Charlton Lake	23	21S	6E	5750
21F11	Chemult	21	27S	8E	4760
21F14	Fire Road	36	21S	11E	5050
21B6	Hogg Pass	24	13S	7½E	4755
21F4	Hungry Flat	30	18S	11E	4200
21F6	Irish-Taylor	25	20S	6E	5500
21F17	Mowich	29	25S	25E	4700
21F10	New Crescent Lake	11	24S	6E	4800
21F19	New Dutchman Flat #2	21	18S	9E	6400
21F13	Paulina Lake	34	21S	12E	6330
21F15	Paulina Prairie	28	21S	11E	4285
21F3	Tangent	28	18S	10E	5200
21E15	Three Creeks Butte	27	16S	9E	5200
21E13	Three Creek Meadows	3	17S	9E	5600
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	24S	5½E	5600
22F15	Windigo Pass	20	25S	6E	5800

Crooked River

19E3M	Derr	14	13S	23E	5670
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
19F1M	Snow Mountain	1	15S	26E	6300
19E4	Tamarack	8	15S	25E	4800

HOOD, MILE CREEKS LOWER DESCHUTES WATERSHEDS (6)

Hood River

21D5	Brooks Meadows	2	2S	10E	4300
21D25M	Cooper Spur	6	2S	10E	3490
21D1	Greenpoint Reservoir	28	2N	9E	3400
21D20	Knebal Springs	31	1S	11E	3850
21D23	Parkdale	6	3S	10E	1770
21B8	Phlox Point	6	3S	9E	5600
21D4	Red Hill	20	1S	9E	4400
21D9	Still Creek	25	3S	8½E	3700
21D7	Tilly Jane	15	2S	9E	6000
21D21	Ulrich Ranch Junction	28	1S	11E	3350
21D24	Upper Valley	20	1S	10E	2530
21D28	Switchback	28	1S	9E	3255

Mile Creeks - Mosier Creek

21D6	Brooks Meadows	2	2S	10E	4300
21D20	Knebal Springs	31	1S	11E	3350
21D21	Ulrich Ranch Junction	28	1S	11E	3350

Lower Deschutes River

21D12	Clear Lake	29	4S	9E	3500
21E6	Hogg Pass	24	13S	7½E	4755

LOWER COLUMBIA WATERSHEDS (7)

Sandy River

21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700

WILLAMETTE WATERSHEDS (8)

Clackamas River

21D15	Big Bottom	25	6S	7E	2118
21D13	Clackamas Lake	35	5S	8½E	3400
21D12	Clear Lake	29	4S	9E	3500
21D16	Lake Harriet	4	6S	7E	2045
21D14	Pinnine Ridge	14 & 15	6S	7E	3500
21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700
21D17	Timothy Lake	26	5S	8E	3295

Santiam River

22E1	Detroit (town)	1	10S	5E	1610
22E2	Detroit Dam	7	10S	5E	1580
21E6	Hogg Pass	24	13S	7½E	4755
21E4	Marion Forks	28	11S	7E	2730
22E3	Mill City	29	9S	3E	826
21E5	Santiam Junction	14	13S	7E	3990
21E3	Whitewater Bridge	28	10S	7E	2175

McKenzie River

21E8	Dead Horse Grade	13	16S	7E	3800
22E4	Lost Creek Ranch	24	16S	6E	1956
21E7	McKenzie	35	15S	7½E	4800
22E5	McKenzie Bridge	13	16S	5E	1272
22E6	Vida	28	16S	2E	800
21E9	White Branch Slide	15	16S	7E	2800

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

Middle Fork Willamette River

22F3	Cascade Summit		23S	6E	4280
22F6	McCredie Springs	24	21S	5E	2120
22F5	Meridian Bar	13	19S	1W	[illegible]
22F7	Oakridge	16	21S	1E	1430
22F5	Railroad Overpass	17	22S	4E	2260
22F_	Salt Creek Falls	33	20S	6E	3300
22E7	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	24S	5½E	5600

Coast Fork Willamette River

22F9	Champion	12	18S	1E	1430
22F10	Golden Curry Creek	1	20S	1E	1136
22F13	Layng Creek R. S.	31	21S	1E	1700
22F12	Lund Park	22	22S	1E	1750
22F11	Weaver Creek	31	22S	1E	1420

Mary's River

23E1	Mary's Peak	21	12S	7W	4100

ROGUE, UMPQUA WATERSHEDS (9)

Rogue River

23G4	Althouse	17	41S	7W	4530
22G6	Annie Spring	19	34S	6E	3918
22G28	Beaver Dam Creek	1	38S	4E	4100
22G21	Big Red Mountain	31	40S	1W	6600
22G13	Billie Creek Divide	30	36S	5E	4300
22G27	Deadwood Junction	8	39S	4E	2400
22F19	Diamond-Crater Summit	34	29S	6E	4800
22G14	Fish Lake	3	37S	4E	2866
22G12	Fourmile Lake	9	36S	5E	6000
23G3	Grayback Peak	2	40S	5W	6000
22G17	Hobart Lake	17	40S	3E	5010
22G26	Howard Prairie	32	36S	4E	4500
22G16	Hyatt Prairie Reservoir	15	39S	3E	4900
22G22	Little Red Mountain	25	40S	2W	6500
23G5	Page Mountain	8	41S	7W	4045
22G5	Park Headquarters	9	31S	6E	1450
22G29	Rye Spring Spur	33	36S	4E	4000
22G10	Seven Lakes No. 1	3	34S	5E	6800
22G11	Seven Lakes No. 2	26	33S	5E	6200
22G2	Silver Burn	33	30S	4E	3720
22G20	Siskiyou Summit	17	40S	2E	4630
22G9	South Fork Canal	12	33S	3E	3500
22G18	Wagner Butte	1	40S	1W	6900
22G1	Whaleback	3	31S	2E	5140

Umpqua River

22F9	Champion	12	23S	1E	1500
22F18	Diamond Lake	27	27S	6E	5315
23G7	Eden Valley Summit	10	32S	10W	2300
22F16	North Umpqua	19	26S	1E	4715
22F23	Red Butte No. 1	36	27S	2W	4560
22F24	Red Butte No. 2	30	27S	1W	4000
22F25	Red Butte No. 3	30	27S	1W	3530
22F26	Red Butte No. 4	36	27S	1W	3900
22F27	Red Butte No. 5	20	27S	1W	3500
22F28	Red Butte No. 6	17	27S	1W	2000
22F17	Trap Creek	1	27S	4E	3800
22C1	Whaleback	3	31S	2E	5140
22F15	Windigo Pass	20	25S	6E	5800

KLAMATH WATERSHEDS (10)

Klamath River

22G6	Annie Spring	19	31S	6E	4018
22G13	Billie Creek Divide	30	36S	5E	5300
21G5	Bly Mountain	15 & 22	37S	11E	5090
21F11	Chemult	21	27S	8E	4760
22G24	Cold Springs Camp	12	35S	5E	6100
20G12a	Crazyman Flat	9	34S	15E	6100
20H2a	Crowder Flat (Cal)	30	47N	11E	5200
22F19	Diamond-Crater Summit	34	28S	6E	5800
21F18	Diamond Lake Jct. (97)	1	29S	7E	4600
21G6a	Dog Hollow	1	40S	14E	4900
20G14a	Finley Corrals	11	36S	16E	6000
22G12	Fourmile Lake	9	36S	5E	6000
21G4	Gerber	12	39S	13E	4850
22G16	Hyatt Prairie Reservoir	15	39S	3E	4900
22G26	Howard Prairie	32	38S	4E	4500
22G15	Lake of the Woods	11	37S	5E	4960
22G5	Park Headquarters	8	31S	6E	6450
22G25	Pelican Guard Station	9	36S	6E	4150
20G6M	Quartz Mountain	2	34S	16E	5320
22G10	Seven Lakes No. 1	3	34S	5E	6800
22G11	Seven Lakes No. 2	26	33S	5E	6200
20H1a	State Line (Cal)	21	48N	11E	5750
20G9a	Strawberry	4	40S	16E	5600
20G2A	Summer Rim	15	33S	16E	7200
21G2	Sun Mountain	22	32S	7½E	5350
20G13a	Sycan Flat	25	31S	14E	5500
21G3	Taylor Butte	16	33S	11E	5100

NUMBER	NAME	LOCATION SEC.	TWP.	RGE.	ELEV.

Pacific Power and Light Company's Snow Stations

[illegible]	Hanley (PP&L)	22	36S	12E	4300
1	Sky Hi Ranch (PP&L)	22	35S	14E	4500
[illegible]	Willamette (PP&L)	34	34S	7E	4187
[illegible]	Agency (PP&L)	25	34S	6E	4200
[illegible]	Gerber Reservoir (PP&L)	22	33S	7½E	4150
[illegible]	Klamath (PP&L)	1	33S	7E	4533
[illegible]	Quartz Mountain (PP&L)	33	32S	16E	5504
[illegible]	Merriman Ledge (PP&L)	3	36S	6E	4200
1	Chaney (PP&L)	23	31S	11E	4600

LAKE COUNTY, GOOSE LAKE WATERSHEDS (11)

Goose Lake

23H15a	Bear Flat Meadow	27	36S	19E	5900
23H9a	Camas Creek	5	39S	21E	5720
23H11a	Cox Flat	10	37S	18E	5750
23G16a	Crane Mountain	13	40S	21E	6020
23H2a	Crowder Flat (Cal)	30	47N	11E	5200
23H3a	Dismal Swamp (Cal)	31	48N	16E	7000
23G17a	Fatten Meadow	28	38S	18E	6800
23G4a	Gearhart Mountain	2	38S	16E	5320
23H1a	State Line (Cal)	21	48N	11E	5750
23G9A	Strawberry	4	40S	16E	5600

Abert Lake

23G15a	Bear Flat Meadow	27	36S	19E	5900
23G11a	Cox Flat	10	37S	18E	5750
23G14a	Finley Corrals	11	36S	16E	6000
23G4	Mill Creek	1	36S	17E	6200
23G6M	Quartz Mountain	2	34S	16E	5320
23G10a	Sherman Valley	15	37S	21E	6600

Summer Lake

23G2A	Summer Rim	15	33S	16E	7200

Silver Lake

21F13	Silver Creek	25 & 26	20S	11E	4900
20G13a	Sycan Flat	25	31S	14E	5500

Warner Lake

23G8M	Camas Creek	5	39S	21E	5720
23G10a	Crane Mountain	13	40S	21E	6020
23H3a	Dismal Swamp (Cal)	31	48N	22E	7000
23G1a	Hart Mountain	1	36S	25E	6150
23G10a	Sherman Valley	15	37S	21E	6600

Guano Lake

19H1	Bald Mountain (Nev)	17	45N	21E	6720
19G1a	Hart Mountain	1	36S	25E	6350
19G4a	Little Bally Mt. (Nev)	8	45N	19E	6600

HARNEY BASIN WATERSHED (12)

Silvies River - Silvei Creek

18E2a	Call Meadows	29	20S	33E	5340
19G2	Delintment Lake	28	19S	26E	5600
19G3	Emigrant Butte	14	21S	27E	5000
18E3	Idlewild Camp	27	20S	31E	5290
19E1	Izee Summit	28	16S	29E	5293
18F1	Rock Spring	23	18S	32E	5100
19F1M	Snow Mountain	1	15S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18F4M	Stinking Water	33	21S	34E	4800
19F4a	Willow-Weld	19	22S	29E	5000

Donner Und Blitzen River

18F6a	Buck Pasture	21	29S	35E	5700
18G2MA	Fish Creek	4	33S	33E	7900
19G1a	Hart Mountain	1	36S	25E	6350
18G1MA	Silvies	35	32S	32½E	6900
18G7a	WYH Lake	31	35½S	32½E	6600

Trout and Whitehorse Creeks

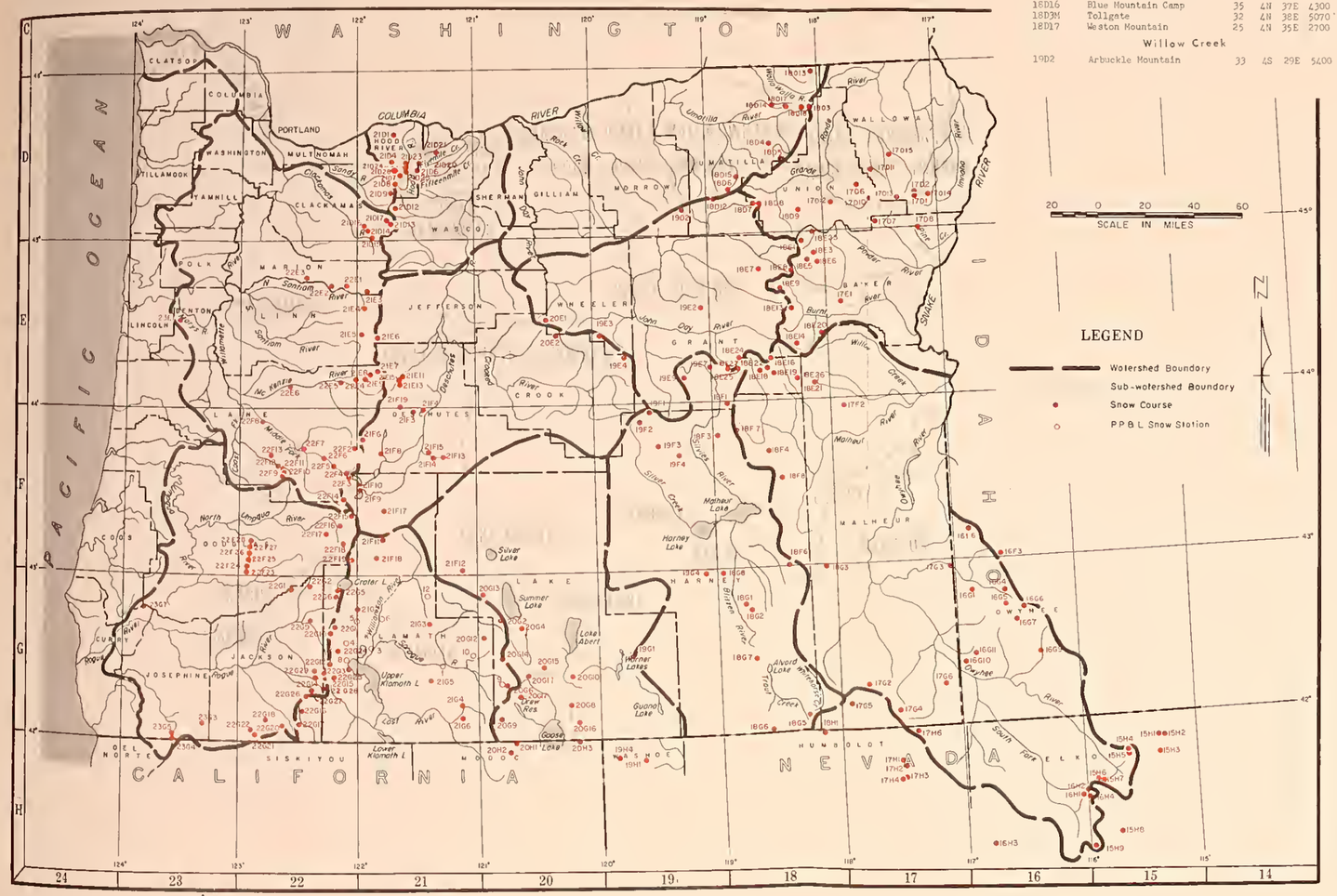
18G6a	Denio Creek	14	41S	34E	6000
18H1	Diamond Peak (Nev)	8	47N	34E	6500
17G5a	Oregon Canyon	9	40S	40E	6950
18C5a	Trout Creek	10	21S	38E	7800

Harney Lake

19G8	Buckskin Lake	2	30S	30E	5200
19G4	Foster Flat	15	30S	29E	5040

LEGEND

- 1907 SNOW COURSE ONLY
- 1907M SNOW COURSE AND SOIL MOISTURE
- 1907MA SNOW COURSE, SOIL MOISTURE AND AERIAL MARKER
- 1907A SNOW COURSE AND AERIAL MARKER
- 1907* SOIL MOISTURE ONLY
- 1907+ AERIAL MARKER ONLY



Map and Index to OREGON SNOW COURSES

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — M-1874

7-5-19101-0

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE
- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil Conservation Districts of Oregon

COUNTY
- Douglas County Water Resources Survey

FEDERAL
- Department of Agriculture
  - Cooperative Extension Service
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Land Management
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
- Department of National Defense
  - Corps of Army Engineers

PUBLIC UTILITIES
- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

MUNICIPALITIES
- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS
- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ROSS BLDG., 209 S.W. 5TH AVE.
PORTLAND 4, OREGON

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

FIRST CLASS MAIL

FEDERAL - STATE - PRIVATE

COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"